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DOMESTIC POULTRY AND RABBITS*

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Practice amongst the small livestock kept by domestic rabbit and poultry keepers occupies a unique place in veterinary routine. It is suspended somewhere between the agricultural practice among animals kept on a commercial basis and small-animal work where pets are valued on purely sentimental grounds. Furthermore, this class of work usually falls to the lot of the urban and suburban practitioner, who normally is concerned with the latter type of practice and hence has to adjust his attitude to meet the demands of domestic livestock owners.

Under the stress of national emergency and the need for every possible ounce of food to be produced at home, many thousands of town dwellers entered with varying degrees of enthusiasm upon the task of producing eggs or rabbit meat, or both, in their back gardens and even yards. At that time it was not possible to buy properly made poultry houses or rabbit hutches nor the timber to make them correctly; in consequence a host of Heath Robinson erections appeared in the gardens of these animal owners, most of them rather less than more adapted for the purpose for which they were intended.

To-day this picture is somewhat changed. The urgency of producing every extra ounce of protein food has passed, yet, with Government-sponsored encouragement for the domestic food producer, many people, introduced during the war years for the first time to productive animal ownership, remain enthusiastic poultry and rabbit keepers and intend to do so indefinitely. Of these, a not inconsiderable number have entered the ranks of true fanciers; many who were content to start with a utility crossbred hen or doe have fallen victim to the charms of one or other purebreed and now concentrate their attention upon improving whichever breed they have chosen, even if they are not exhibiting.

It is now possible to obtain a fairly wide range of well-made houses for small livestock, and those still entering the ranks of domestic keepers need no longer make do with improvisations of doubtful utility. It has to be remembered however that with the exception of those to whom this line is now a hobby, the keeping of livestock is an additional item in the family budget and one on which the majority of people do not feel justified in spending more than is absolutely necessary. For this reason both the attitude of the veterinary surgeon and the fees charged must be adjusted accordingly. On the one hand, particularly with poultry, the same line of approach cannot be adopted as with a commercial flock; light-hearted recommendation to kill off unthrifty stock will not be welcomed, yet it is necessary to be quite firm about the inadvisability of treating individual birds unless return to full productivity within a reasonable time can be expected; on the other hand, most domestic poultry and rabbit keepers expect their animals to be treated as individuals, and in the case of pullets which cost anything from 30s. to 50s. each as replacement stock one can appreciate that owners do not want to lose their outlay without some attempt at salvage; likewise the fur breeds in rabbits may be worth several guineas apiece. In addition, one occasionally meets the incurable sentimentalist who is not prepared to destroy a bird or animal unless it is essential; one has to recognise such persons and deal with them accordingly, but I always point out that I will prescribe treatment if they wish, but that in my view it is not a practical proposition. By adopting this attitude one avoids being stigmatised as callous, while there are no hard feelings if after weeks of effort by the owner and several visits to the surgery the animal is destroyed or dies.

It is, of course, necessary for the veterinary surgeon to have a fairly good knowledge of the general routine and management of backyard flocks and rabbitries, not to say of the many breeds of both species. I acquired both by joining my local rabbit and poultry club and by visiting shows and keeping my mouth firmly shut until such time as I could open it without putting my foot in it. Such silence is fortunately interpreted by the members as professional reticence!

One is expected to be able to advise on management, purchase and replacement of stock, breeding and rearing, and, indeed, every facet of the subject. A knowledge of each owner's system is essential as, for example, it is quite pointless to recommend treatment of a pullet or hen in June or July if it is the custom of the owner to buy replacement pullets every autumn; any upset or illness will put a bird off lay for four to six weeks and if by the time she is ready to lay again she is due to go into the moult and be killed, the whole thing is useless; however, such a case would be worth treating in winter or early spring as several months of lay will be left, and it is a time when it would virtually be impossible to replace the bird and so keep the flock up to strength.

Contrarily, if presented with a rabbit of one of the fur breeds (Chinchilla or Rex, for example), even if it is eventually going to be necessary to destroy the rabbit, palliative treatment should be adopted if the animal is in the moult at the time in order that full value for the pelt finally may be obtained.

Even in present conditions, one has frequently to suppress the desire to make sweeping recommendations for "changing the ground" after an outbreak of coccidiosis or some losses from tuberculosis. All too often the house and run, even if less Heath Robinson than hitherto, is squeezed into the only available space between the coal-shed and the back fence, and grandiose suggestions on change of management serve no purpose other than to make one look ridiculous.

POULTRY

First of all, I will deal briefly with those infectious diseases which have been encountered in "backyard" practice.

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1. Bacillary White Diarrhoea (*S. pullorum* infection)

I start with this in spite of the fact that I have never seen it in domestic poultry keepers' chicks. This has surprised me in view of the fact that some enthusiasts have reared chicks hatched from far from new-laid shop eggs, or day-olds bought in markets. I have, however, seen *post-mortem* lesions in the ovaries of adult birds which have been killed for general unthriftiness or poor average production.

2. Coccidiosis

Two forms of coccidiosis occur, both of which have been seen in backyard flocks. Caecal coccidiosis (*Eimeria tenella*) occurs in young chicks, usually between ten days and six weeks of age. Mortality varies according to the severity of the outbreak and the management, but may be very high. Symptoms include diarrhoea, blood in the droppings, general unthriftiness, ruffled plumage, lack of normal activity, leg weakness, pallid head; in acute cases deaths may occur before symptoms are noticed. Diagnosis is made by the finding of large numbers of oocysts in the caecal contents of dead or killed birds. As a rule there are also obvious changes in the walls of the caeca.

Treatment is, of course, by the use of sulphamezathine. A 0·2 per cent. solution should be substituted for drinking water and treatment continued for three to seven days after the cessation of symptoms. A saturated solution in water is equally effective and simple to prepare. It is obvious that change of ground is desirable, but often, as previously mentioned, not practicable. Many poultry keepers have proved quite ingenious at arranging some form of slatted flooring in their chick-rearing run. I need hardly add that routine disinfection of the house is necessary, the best agent being 10 per cent. solution of ammonia.

Coccidiosis in older birds is usually of the duodenal type, although caecal infection may co-exist. Coccidia involved are *E. necatrix* and *E. acervulina*. Losses tend to be sporadic, but there is a general unthriftiness of the flock and the egg yield is poor. The gut is swollen, often shows white spots externally and the contents are mucoid. Microscopic examination of droppings or material from the duodenum of a dead bird will reveal oocysts and aid diagnosis. Sulphamezathine is useful but not so spectacular as in chick coccidiosis. The management should be critically reviewed as there is often some underlying secondary factor which has allowed clinical disease to develop.

3. Fowl Paralysis

This is perhaps the most common of the infectious diseases to be seen in the backyard flock and it is difficult to make the clinical picture clear to the owner as regards infection, spread and prognosis.

The basic facts regarding fowl paralysis are, I think, well known to most of you. Infection takes place in youth or even infancy, older birds apparently not being likely to contract new infection. Wilson considers that susceptibility is greatest during the first four weeks of life, but that isolation from sources of possible infection should be continued during the first six to eight weeks. Chicks reared from hatching and kept to two years old showed a mortality rate from fowl paralysis of 1·11 per cent. and an average egg yield of 217·3 when reared on fresh ground as compared with a mortality rate of 31·4 per cent. and an egg yield of 75·1 from chicks reared on ground where losses had occurred previously. A similar experiment in chicks of eight weeks old upwards showed little disparity in losses between the two groups. Either the incubation period is long or the disease runs a chronic course, or more probably is latent in the bird until a time of increased strain in the bird's life allows clinical symptoms to become manifest. Natural susceptibility varies tremendously from strain to strain, some being apparently solidly resistant.

In view of the small size of domestic flocks the epidemic picture is not seen clearly. As has been said, symptoms commonly are first noted at a time of stress and these times are as follows:—

1. During feathering, three and a half to five months according to breed.
2. Within six to eight weeks of the commencement of lay, particularly in heavy laying birds.
3. During moult.

It follows, therefore, that most cases occur during the pullet year, or at latest in the moult after the first season's lay; this is helpful in differentiating from tuberculosis when trying to arrive at *ante-mortem* diagnosis. The claw reflex is valuable. Hold the bird by its wings and drop through the air to near the ground. A normal bird will spread its claws, whereas one affected with fowl paralysis has no power in the affected limb, which remains slack. Symptoms are varied. Cases seen at the feathering age usually show slower development than their flock mates by being smaller and less well-feathered; later, appetite fails, there is progressive emaciation and often lameness or drooping of a wing. Lame birds may show unilateral muscular atrophy about the thighs; likewise it may be possible to palpate the edges of an enlarged liver.

Birds in the second group generally come into lay normally and lay well for a period of two to eight weeks, then usually go off rapidly, losing weight, showing lameness or wing drooping and often diarrhoea; they may even be found dead after a short illness. A few cases occur in second season birds which either fail to come through the moult satisfactorily or recommence lay and then go into a rapid decline as in the second group. I have very rarely seen the "pearly eye," although I look for it carefully in all cases; sometimes I have seen a ragged edge to the iris indicating a mild iritis.

There is, of course, no treatment and ailing birds should be killed. It is advisable to warn owners that if they have a batch of several birds from the same source they may get other sporadic losses owing to infection obviously having occurred in the flock during youth.

Probably more losses occur in domestic flocks from fowl paralysis than from any other single cause.

Fowl Pest

Fowl pest is, of course, a notifiable disease and therefore concerns the practitioner only to the extent of being on the alert for an outbreak and taking the necessary steps when his suspicion is aroused. The term fowl pest covers two diseases, fowl plague and Newcastle disease, and the latter has been with us again since 1947. It has occurred in backyard flocks and must therefore be mentioned in this paper. I do not propose to enlarge on symptomatology or methods of infection and spread. At its initiation the incidence of unexpected deaths plus ailing birds in previously healthy flocks was enough to warrant reporting a suspected outbreak; later, as the virulence decreased, the only indication might be lowered egg yield which could not be accounted for by weather, feeding, etc., and possibly the existence of "colds" and diarrhoea in a few birds. Perhaps I am unduly cautious, but I have preferred to

report any cases where I felt sudden death could not be explained on some incidental ground such as egg peritonitis.

Tuberculosis

This disease is only likely to be a problem under conditions of management where birds are kept to their third season or even longer; in consequence, the incidence in backyard flocks where there is an ever-increasing tendency to replace pullets annually, or at the most to keep them two seasons, is decreasing. In the early war years there were numerous losses from this disease, but curiously enough there was rarely any tendency for the disease to assume serious proportions, even in flocks where two or three losses had occurred and it was impossible to move the flock (either survivors or replacements) on to fresh ground. Where possible birds were moved off infected ground or the run was dug over two spits deep and limed in sections, which seemed quite serviceable.

Tuberculosis is known to poultry keepers as "going light": this expression refers to comb and wattle colour and not loss of condition; affected birds are paler than usual about the head. Diagnosis on *post-mortem* examination is easy, lesions usually being numerous (the spleen is almost invariably affected, which may assist in differentiating from multiple tumours in certain leukaemias) and organisms are readily demonstrable in Ziehl-Neelsen films.

Coryza, Roup, etc.

Fowls often suffer from non-specific "colds" with coughing, sneezing and slight depression. Egg yield occasionally may be affected. Bronchitis follows in a few cases, as does so-called "roup," an accumulation of inspissated pus in the peri-orbital tissues. This latter condition is not satisfactory to treat, even surgically, but the affected bird may continue to lay and since there seems little risk of spread to others of the flock she may be allowed to go through until her next moult, when she is killed. Cod-liver oil alone or with syr. ferri. phos. co. is a useful tonic.

Parasitic Worms

I have never seen infection with *Syngamus trachea* in backyard flocks, and have either not seen or failed to diagnose, crop worm or taenia infection. *Heterakis gallinae*, the caecum worm, is virtually a normal inhabitant and rarely becomes pathogenic. Round worms, *Ascaridia lineata*, can cause disturbance if present in large numbers. In spite of the fact that carbon tetrachloride is the recommended agent, I have found phenothiazine gives quite satisfactory results and is relatively safe. It may be fed in the mash at a dosage of 0·5 to 1 gramme per bird.

Nutritional Disorders

Time will not allow me to deal with nutritional disorders in detail, but I will mention two of importance in domestic poultry.

Rickets is common under conditions of backyard rearing, showing itself as a leg weakness in chicks of four to 12 weeks old. Treatment is, of course, on routine lines and management methods must be checked.

Although I have never seen ariboflavinosis in young chicks under backyard conditions (it usually occurs in stock reared in wire-floored brooders) it is not uncommon in the adult laying bird. It occurs in highly pigmented breeds, particularly in heavy layers.

Symptoms noted are a form of paralysis in which the affected bird sinks back on its hocks and cannot stand or walk; the perching reflex is diminished or absent. The facts that wing position usually is normal, the condition is bilateral and occurs in birds in first-class condition, serve to differentiate it from fowl paralysis. Some birds continue to lay, although paralysed. Injection of, or tablets *per os*, riboflavin (3 to 10 mg. daily) usually gives excellent results in the individual.

Yeast should be added to the mash for the whole flock.

Incidental Diseases

This group include some conditions where treatment of an individual kind is called for by the owner and is often warranted.

Prolapse.—Most common in light breeds laying large eggs, *e.g.*, White Leghorn. If seen within ten to 20 minutes the prolapse can be cleaned up, replaced and the vent sutured. The bird must be put in a dark pen and virtually starved for two days to throw it out of lay. Cases seen later are usually hopeless.

Egg Peritonitis, Ruptured Oviduct, "Internal Layer."—A condition when the unshelled egg escapes into the abdominal cavity. This may cause acute peritonitis and sudden death, or the eggs may continue to be discharged into the abdomen where they form a solid inspissated mass, later causing a drooping of the abdomen, pressure and eventual death. Sometimes in the early stages a bird is seen to leave the nest, obviously under the impression that she has laid, but no egg is found. It is often possible to diagnose by palpation with one finger in the cloaca and one on the abdominal wall. There is no treatment. If the condition is diagnosed before the bird has lost weight the bird can be killed for table, provided it is drawn immediately and the abdominal contents are not putrid.

I have noted a high incidence of this condition in flocks of heavy breeds where either the perch or nesting box is too high, necessitating an awkward flutter up or high jump down to reach them. Rectifying this has often resulted in a gratifying decrease in incidence.

Crop Trouble.—You are all familiar with impaction of the crop and its treatment, but more common in my view is a condition of chronic over-distension of the crop (probably from prolonged bulk feeding) leading to eventual atony and paralysis. Such a crop is large, pendulous, flaccid and partially full of fluid or semi-fluid material. Treatment is worth while. First the crop must be emptied of its foul contents; this can be achieved by holding the bird upside down and massaging the contents out, giving an occasional breather! Subsequently the bird must be isolated, fed only on hard tack and the crop massaged daily to ensure emptying. Tr. nux vomica seems helpful. These cases usually return to lay in four to six weeks.

Rheumatoid Condition.—Apparent rheumatism or cramp often occurs. Salicylates (2½ gr., *t.i.d.*) and removal to warm dry quarters often prove successful. Septic arthritis may be encountered and this is hopeless.

"Bumble Foot."—A condition of infection of the sole of the foot. There is usually a corn-like protuberance and if the corn can be removed inspissated pus is found beneath. Routine surgical treatment is often successful.

Haematomata.—Haematomata may occur anywhere in the body, but particularly about the comb and wattles. Fatal haemorrhage often follows an attack by a flock-mate or a would-be surgeon. There seems to be some hereditary tendency and strain incidence. If multiple the bird is best destroyed. Occasionally natural regression takes place.

Feather Picking.—This is a vice which develops as a result of protein deficiency or boredom. The former can

be rectified simply by the addition of fish waste or even horse-meat, or if necessary blood meal; the latter by change of management.

Caponising.—Caponising cockerels for backyarders is well worth while. It enables these owners to raise birds for table without offending either their neighbours or local by-laws. The additional increase in weight in such birds is not significant as they are usually killed well before reaching their maximum. Crowing and fighting is abolished and weight gain per unit of food is improved.

RABBITS

The rabbit fancy, like the cat fancy, is very reserved and difficult of approach, hence I have found the scope of veterinary work in this field somewhat hampered, although under the stress of war conditions some work could be done.

The following are the infectious diseases with which I have come in contact.

Coccidiosis

Coccidiosis in rabbits is caused by two varieties of *Eimeria—E. stiedae* which invades the liver causing a hepatitis, and *E. perforans* which causes intestinal infection. Both types of infection usually co-exist. The disease in rabbits is essentially similar to that in other hosts, predominant symptoms being scouring and loss of flesh with mortality highest in the younger age groups. Diagnosis is, of course, made on demonstration of the oocysts in the faeces, but it must be emphasised that oocysts must be demonstrable in large numbers to warrant a diagnosis of the disease; a few oocysts in rabbit faeces are of no clinical significance. On the other hand, it must be remembered that owing to the life cycle of the parasite oocysts tend to appear in a cyclical manner and a negative diagnosis should not be made on a single faecal examination if clinical evidence suggests the presence of the disease.

Coccidiosis is most commonly found in communities where the management is fairly good or where a system of folding in runs on a limited area of ground is practised. In rabbitries where the standard of hygiene is really high or where the stock is kept on wire floors, the disease is unlikely to become established. Curiously enough it is rare to meet clinical coccidiosis in rabbitries where the management and hygiene are frankly bad, *i.e.*, where rabbits are kept in small, poorly constructed hutches which are only cleaned out at infrequent intervals. The reason for this apparent anomaly is that the litter in such cases contains a considerable quantity of free ammonia from the decomposing urinous mass and since ammonia is more lethal to the oocysts than any other agent the parasite in such cases never attains pathogenic numbers.

Control is, of course, carried out primarily by improving management and, secondly, by therapeutic use of the sulpha drugs. The life cycle of the parasite can be broken and the disease controlled by keeping all stock on wire floors for a period of three to four weeks after which the parasite burden of the rabbits should have been so lessened that clinical manifestations cease. Rigorous disinfection of hutches with ammonia solution is extremely effective.

Treatment.—Hepatic coccidiosis. Various sulphonamides have been tried out, but most are highly toxic to rabbits. Horton-Smith showed that 1 per cent. sulphamezathine fed in mash would control infection if given up to the tenth day after heavy infection, and was useful also prophylactically. Sulphapyrazine was also found useful. Rabbits surviving an infection as the result of prophylaxis or treatment are resistant to infection with the same species of coccidia for some time.

Peterson found 0·025 to 0·03 per cent. sulphaquinoxaline or sulphamerazine to be valuable prophylactically and in advanced cases administered in the drinking water over a period of at least three weeks. Sulphamezathine was not so effective in his hands by this method.

Regarding intestinal coccidiosis Lund concludes that the domestic hutch-bred rabbit has a reasonable tolerance for this disease, that infection can rise as high as 40 per cent. without cases of economic significance arising and that there are many factors operating, furthered by normal methods of management, which maintain a favourable host-parasite relationship.

"Snuffles"

Snuffles is the name given by rabbit fanciers to a condition of chronic nasal catarrh. There does not appear to be a specific causal organism, and many different bacteria have been incriminated in various outbreaks.

The disease is essentially one of the large rabbitry in which it is usually endemic; morbidity is high and mortality low, although there is undoubtedly some lowering of the standard of health in affected communities. Symptoms are those of chronic nasal catarrh with constant sneezing and a more or less purulent rhinitis resulting in persistent nasal discharge; affected rabbits constantly clean the nose with the forelegs, and wet, excoriated or matted forelegs in a rabbitry are virtually diagnostic. The disease is extremely difficult to eradicate once it is established and in view of the low mortality and little effect on breeding activities few owners are willing to co-operate in drastic measures for its control. Many therapeutic and biological methods of treatment have been tried, mostly with little success. Complete eradication of the disease would almost certainly necessitate elimination of the present stock and either the replacement of existing housing or leaving it vacant for a period of months.

Sporadic cases may be seen in individual rabbits purchased from an infected rabbitry; in such cases individual treatment by sulpha drugs, penicillin or autogenous vaccine, plus attention to hygiene, may be warranted.

Pseudo-tuberculosis

This is a disease caused by *Pasteurella pseudotuberculosis* and gives rise to lesions not dissimilar from true tuberculosis, although with less tendency to generalise. Many lesions are found in the intestinal tract. Symptoms are rarely noted until the terminal phase when general symptoms of ill health are present. It seems probable that many rabbits are affected without displaying clinical signs, but any period of unusual stress, *e.g.*, following kindling or lactation, or during the moult, may provoke a flare-up of the disease which is then usually rapidly fatal. Like snuffles, it appears to be virtually endemic in some communities. There is no treatment and diagnosis is based on *post-mortem* findings.

Unknown Disease Causing Fading Out of Young

Many losses occur in young rabbits, usually between three to ten weeks of age. The youngsters suddenly cease to thrive, lose weight and die, often after convulsions. On clinical evidence the disease is undoubtedly infectious and adults appear to act as symptomless carriers. It is often noticed that a doe will lose one litter, possibly a second, and then be able to rear subsequent litters satisfactorily. This disease became very widespread during the war and caused enormous casualties. *Post-mortem* findings are nil.

Research was proceeding, but I am not aware that anything definite has been discovered.

Other Conditions

Internal parasites other than coccidia are of little practical interest. Rabbits fed on green food gathered in and near towns are always infested with tapeworm cysts. Numerous cysts are attached to the peritoneal lining of the liver, bowel, etc.; they apparently are no inconvenience to the host and merely serve to keep the life cycle of the dog tapeworm going merrily around and around. Coenurus cysts, on the other hand, can be troublesome. They often arise in the subcutaneous tissues, frequently about the head; they need to be differentiated from abscesses, and ordinary clinical examination is usually sufficient. Surgical removal is perfectly feasible under local anaesthesia, care being taken not to rupture the cyst wall.

The commonest external parasite of rabbits is the mite causing ear mange; the condition responds readily to sulphur, benzyl benzoate or any other routine acaricidal dressing.

Incidental diseases of many types are met, some of which can be treated on routine lines.

Abscesses are quite common, usually containing thick, almost caseous pus; routine treatment is usually adequate. Hypocalcaemia in recently kindled does is not uncommon, and response to injection of calcium is good, although repeated injections are occasionally needed; calcium by mouth may suffice in mild cases, pulv. calc. phos. being most easily administered in milk or a mash feed.

Paraplegia is met with not infrequently in rabbits which make a habit of jumping at the hutch doors; the condition is comparable with that in the dog and pain can often be elicited in the lumbar region. Prognosis is bad—I do not recall a case which recovered.

Tympany is quite common, usually following some dietary change, *e.g.*, too lavish green food after the winter. Copious drafts of a solution of Epsom-salt, if this can be managed, may be effective. There is some evidence that bloat may be a symptom of an infectious condition in which a mucous enteritis is the main feature.

Metritis, mastitis, prolapse of the vagina and prolapse of the urinary bladder following kindling have all been seen; treatment has proved of no avail.

I have seen several cases of fracture of the femur; rest in a confined space usually gives satisfactory results in some cases, as in dogs, and if the injured animal is a breeding doe it may be worth keeping her.

Sore hocks is a self-explanatory condition occurring mainly in the Rex varieties. I cannot help feeling that there is a specific cause, either bacterial or in genetic make-up. In my hands the condition has proved completely intractable, no form of treatment or management giving permanent results.

Rabbit syphilis, caused by a spirochaete, is not uncommon, yet I do not recall seeing a case I could diagnose definitely as such. Transmission is by coitus and the symptoms are mainly those of inflammatory lesions around the external genitalia in both sexes.

Constant sexual activity in colonies of young bucks causes some delay in reaching table weight and castration has occasionally been resorted to. In this connection it must be remembered that the buck can retract the testicles and that there is consequently a fairly free peritoneal connection with the abdomen; contrary to procedure in other species, a conservative incision should be made or herniation of bowel may follow.

There are, of course, numerous conditions upon which I have not touched. Many diseases of the rabbit require and deserve far more attention than has so far been given them, but the conservatism of the rabbit fancy does not make rapid progress in this field very easy.

References

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Discussion

Mr. Buckler asked if chemical caponising was more effective than surgical.

Miss Joshua replied that, on the whole, results were better with chemical caponising. After surgical caponising if any fragment of testicle was left it was capable of regeneration; leaving such fragments was common owing to the intraperitoneal site of the testicles. There was a high proportion of "slips."

Stilboestrol implants gave some variation and there was sometimes encapsulation and failure to absorb. If this occurred they could be repeated. There were no casualties or setbacks to weight by this method.

Mr. Pickup enquired if it was correct to say that best results were obtained when birds caponised chemically were done late.

Miss Joshua: Production of androgen was highest during the breeding season, therefore better and longer-lasting results were obtained in birds done late; it was wise to wait as long as possible. The effects of stilboestrol lasted from two and a half to five months according to when the implant was done.

Mr. Powell, speaking from experience of commercial poultry keeping, said the average total loss of birds from day old to one year was 20 per cent. He asked how long coccidial oocysts could remain infective. Mr. Powell described two outbreaks of caecal coccidiosis in White Leghorn cockerels. The first batch were reared with a Weston brooder on a concrete floor where there had been no poultry for 15 years. Deaths from coccidiosis occurred within three weeks. The second outbreak took place in a batch of birds reared in a loft with wooden floor and peat moss litter where no birds had been previously. Both batches were from so-called accredited stock.

He mentioned the use of sulphamezathine, which, he said, controlled the losses but many died in spite of treatment. He asked if routine dosing from seven to ten days to three to four weeks of age would stop the losses by applying treatment before symptoms occurred.

Referring to fowl paralysis, Mr. Powell said he had met it mostly in the six to 12 months age group. At six months he found typical wasting, drooping wings and death.

Older birds in good condition were sometimes found dead. Presuming that infection was mostly eggborne, he asked if the incidence could be reduced by breeding from older birds which were free from the disease.

Could the cock transmit infection via the hen and the egg? Most breeders bought in a cockerel from outside. Birds with a dark iris were chosen. The change in the iris in fowl paralysis was remarkable, a deep reddish brown became very pale.

Apropos accredited licences, he thought the description misleading since it meant only that birds were free from B.W.D. Many accredited flocks had fowl paralysis. He suggested that inspections should be made.

He queried the value of testing for tuberculosis, saying that many infected birds passed the test.

Round worms could cause severe losses in three-month birds and in laying hens. He found carbon tetrachloride, 2 c.c., very effective in adults. He had lost only one bird in 2,000—on account of a capsule broken during dosing.

In hock disease in young chicks he found they recovered on vitamin B_1 only.

Rupture of the oviduct was a common trouble and lower perches would be useful to reduce its incidence.

Prolapse of the oviduct often occurred after five to six months' laying, leading to severe haemorrhage and death in from one to 12 hours.

Sour crop he considered was due to bad feeding. He encountered a great many when maize pulp was fed. Impaction followed the sour crop.

Feather picking was simply a protein deficiency. He had seen 350 cockerels reared in a Nissen hut without cannibalism or feather picking occurring, by feeding them on offal from a bacon factory.

In an experiment with stilboestrol caponising he had used two

batches of 100 Light Sussex cockerels. At 16 weeks the implanted birds showed an average gain of over 1 lb. more than the controls. It was desirable to repeat the implant after two to three months.

Miss Joshua: The survival time for coccidial oocysts was said to be two to three months. Wild birds might be incriminated as carriers.

Sulphamezathine was useful prophylactically if given early in an outbreak for three weeks. Exposure to infection then resulted in a resistance developing.

With reference to fowl paralysis in older birds, many of Mr. Powell's cases might be other forms of leucaemia. It was not clear if infection could take place via the egg. It was unlikely that the cockerel could be incriminated. Infection was carried by older birds and it was important to rear young stock on clean ground. Breeders should aim at getting stock with a natural resistance to fowl paralysis. Some strains, *e.g.*, some Brown Leghorns, were very resistant. There did seem to be some correlation between good pigmentation in the iris and resistance.

She agreed that round worms could cause loss in older birds. There was a state of sub-health and poor egg yield.

Curled toes and paralysis in chicks was a riboflavine deficiency. It occurred in birds in wire-floor brooders. Riboflavine was formed in the faeces and complete absence of eating the droppings meant that the B complex must be supplied in some other form. Brewers' yeast was a useful addition to diet.

In egg peritonitis the cause might be a displacement of the ovum when it was being shed, owing to awkward fluttering up to a high perch, especially in heavy breeds. Lowering the perch had had gratifying results in some cases.

Distended crops and sour crops were common in the backyard hen fed largely on potato and minced raw vegetables without any hard food.

Impaction was common from the feeding of long grass cuttings. She agreed that deficiency of animal protein was the chief cause of feather picking. It was seldom due to boredom.

Dr. Hare thanked Miss Joshua for her survey of poultry and rabbit diseases.

He thought Mr. Powell was wrong in inferring that his premises were the source of coccidial infection. The most probable explanation was that some of the stock at the time of purchase were infected. The life of the oocyst might be 18 months or longer. Interspecies transmission was unlikely. The term "accredited" meant nothing more than that the breeding stock had been blood-tested for B.W.D. The incidence of coccidiosis had increased over 400 per cent. in the last 25 years, with the steepest rise in the last ten years. Infection might occur in the first seven days of life. Dalling reported death at the seventh day; he himself had confirmed the presence of coccidia in faeces as early as the third day. The number of coccidia found was no criterion of the quality of the infection. For treatment sulphamezathine was very good within its limitations. It had an adverse effect on metabolism in the liver, which could be mitigated by supplying calcium, protein, glucose and chlorides. He prescribed sulphamezathine for seven days, followed by three days off, repeating this ten-day cycle for 30 days or longer.

Chronic coccidiosis was a common cause of breakdowns in laying stock, sterility and egg peritonitis.

Dr. Hare paid a tribute to the late Henry Gray's pioneer clinical work in disease of rabbits.

THE MILK (SPECIAL DESIGNATIONS) ACT, 1949

London and Portsmouth Specified as Areas for Regulation of Milk Sales

On Tuesday of last week the Ministry of Food announced that, subject to consideration of any representations that may be made, the Minister will lay before Parliament orders regulating the sale of milk in the London and Portsmouth areas.

The orders, due to operate from October 1st, will require that all milk sold by retail in the areas named shall be special designated milk—that is, sterilised, pasteurised, or tuberculin-tested milk, or accredited milk from a single herd.

The Milk (Special Designations) Act, 1949, empowers the Food Minister to specify areas in which retail sales of milk shall be limited to the classes of milk sold under special designation. The object of the Act is to ensure that milk supplied for liquid consumption shall conform to the highest standards of purity.

ODDITIES OF EIGHTEENTH CENTURY FARRIERY

Francis Clater, William Griffiths and William Taplin

BY

G. E. FUSSELL, F.R.HIST.S.

Dealing in and with horses, judging by results, is an occupation that stimulates whatever native wits the dealer may possess, and if the acid criticism of each other that the early farriers make is any criterion, it promotes an unusual degree of acerbity. Controversy and mutual contumely is not unknown in a scientific age, but the often unlettered aspirants to fame in this profession of the eighteenth century did not recognise such restraints as may be practised by more educated men. Though often original in their choice of epithet, however, these men were not very original in the choice of titles for their books.

"Every Man His Own Farrier" was used by several writers on the subject ranging from the aristocrat Sir Paulet St. John, Bart., to Francis Clater. Throughout the history of agricultural writing it is common form for authors to claim 40 years' experience in the craft, four decades being apparently considered necessary to become expert enough to write a book. Clater decided to break with tradition and commenced as author at the early age of 25 after serving "a regular apprenticeship," and acting as "a journeyman" for one year under his uncle, the then late W. Frost, farrier late of Nottingham. The benevolent uncle had confided all his secrets to his nephew and Clater claims that it was at the request of numerous farmers and gentlemen that he put these on record in a book that he was sufficiently confident to have printed at his own expense in the year 1783.

Modern opinion of the value of this book is divided. On the one hand, it has been said that the publication of these works—Clater issued another book, "Every Man His Own Cattle Doctor" in 1810—marks a stage in veterinary progress because Clater insisted on careful diagnosis and the use of pure drugs, two fads that earned him general hostility, if not active hatred, from his competitors. On the other hand, it is remarked upon as strange that a young man just entering practice should wish to educate his professional rivals, "to say nothing of his consummate assurance in advertising his ability to teach," when there was in fact nothing new in the "Farrier" book, which was wholly copied from earlier and none too well informed writers.

This earned him the implacable enmity of his competitors, who feared that he would teach the public too much, and so destroy the hierarchic value of the profession, the secrets of which were as mysterious as those of contemporary hagiology. Clater was not disturbed. He was the successful type, commercial, ambitious, full of assurance and determined by any method to attract public attention. This writer's work had a remarkable circulation, and his name became a household word amongst horse and cattle breeders and doctors. The twenty-first edition of "Every Man His Own Farrier" appeared in 1812 embellished with a portrait of the author, so perhaps his customers, the farmers and gentlemen, had been right to demand, if they really did, that he write the book.

There was no lack of criticism. R. Obbinson, of Boston,

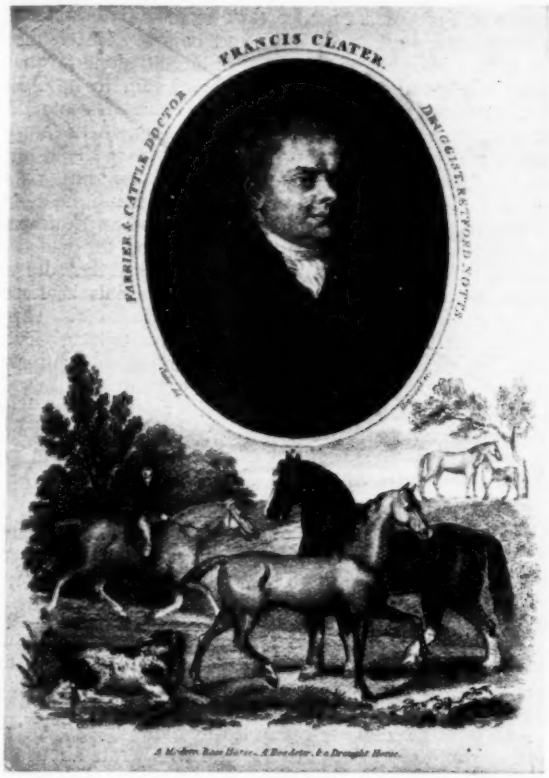

FIG. 1.—Frontispiece from Francis Clater, "Every Man His Own Farrier," 21st ed., 1812.

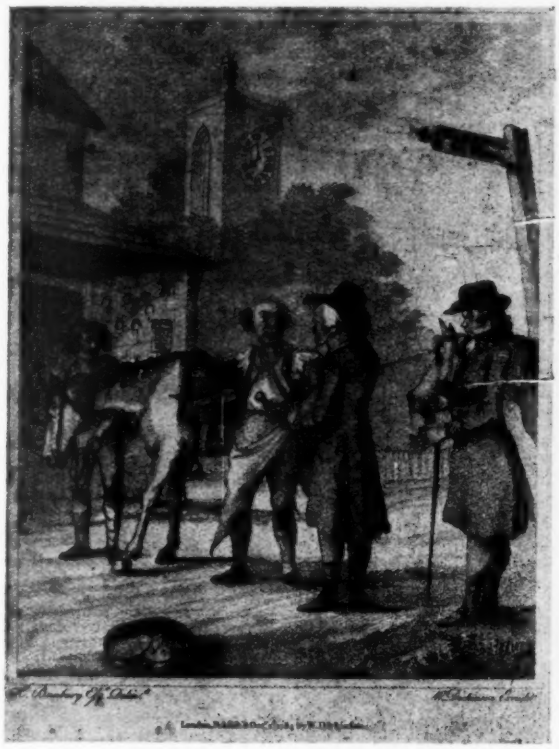

FIG. 2.—Frontispiece from William Griffiths' "Practical Treatise on Farriery," 1784.

Lincs, found the book an excellent mark for his wit and satire when he addressed "A letter to Mr. Francis Clater on the Errors of his popular Book" in 1822 with such good effect that Clater "purged his pages of nonsense" after reading it. Possibly he might have done so earlier had it not been that he had sold the copyright to a publisher in the North of England, who refused to allow any revision, but the agreement lapsed in 1810 and so Clater was able to leave out a good deal of exploded conjecture.

Clater's other book, "Every Man His Own Cattle Doctor," first published in 1810, was equally popular. A sixth edition appeared in 1825, and it was reprinted as late as 1919, revised by D. McTaggart. The long life of this book meant that it was corrected until the text had practically been re-written, and with the progress of knowledge a good many old wives' tales were omitted. It was just as popular in America and was considered indispensable to farriers. Clater had as great a vogue as the later writer William Youatt. He died, aged 77, in 1832, and a stone was erected to him in the Methodist Chapel, Newgate Street, East Retford.

A less guileful person was William Griffiths, groom at Wynnestay, who nevertheless claims the conventional 40 years' experience and was the author of "A Practical Treatise on Farriery," printed at Wrexham in 1784. The title page proclaims that he had spent the essential four decades acquiring experience, if not knowledge, in the service of the late Sir Watkyn Williams Wynn. This book, whose author has been condemned as another example of an ignorant pretender, supported by powerful names, getting his nonsense broadcast, is adorned by a frontispiece by Bunbury. Even if that is over harsh, for Griffiths must have learned something during his life, he was easily impressed by appearance and unwilling to admit his own limitations. This led to his being made to appear a pompous fool when David Garrick visited his employer. Garrick pretended to be a London veterinary and inspected Wynn's stables. He looked knowingly at one sick horse, and with an air of great authority remarked that it was a clear case of "spifflication." Griffiths exposed himself to ridicule by anxiously agreeing that he had long suspected it would end in that.

Clater began his successful career at 26 with all the self-confidence of youth. Griffiths was a simple soul, probably sound enough in the accepted practice of his day, but afraid to acknowledge that he did not understand what Garrick was talking about. A more perfect example of a quack with some good ideas than either of these was William Taplin.

John Lawrence, a contemporary writer on the "Horse" and other subjects and a great humanitarian, had nothing but contempt for Taplin. He spent a vast deal of print in proving him to be valueless, but could not prevent the continuing sale of his popular books. The first of these, "The Gentleman's Stable Directory, or Modern System of Farriery" appeared in 1788.

Taplin laments that among all the improvements of his age none had received so little advantage from the rays of refinement as the "Art of Farriery." Whilst distinguished

Fig. 3.—W. Taplin—Frontispiece of "The Gentleman's Stable Directory," 12th ed., 1793, Vol. I.

members of the learned societies were absorbed in abstruse contemplations and intense lucubrations upon such frivolities as the antiquity of a coin, the proboscis of an elephant, the glories of an exotic, a branch of study involving the health, safety and preservation of the most beautiful and esteemed animal this kingdom could boast of was left to illiterate horse boys, jockeys and copers. As he had been trained as a medical doctor, Taplin claimed to be in quite another category, but Lawrence roundly declared that, so far from being a variation from or improvement upon earlier books, Taplin's was merely a compilation from them, the plagiarism being attempted to be concealed by ribaldry here and by pretended experience or affected invective there. Again It has been condemned as diffuse, vituperative, disgracefully egoistical and bombastic. However true this may have been, the book went rapidly through 12 editions, and was again issued as "A Compendium of Practical and Experimental Farriery" in 1796. It was also translated into German.

Widely as the book circulated, it was not Taplin's sole, nor probably main, source of income. He sold Guinea Horse Medicines in a container sealed and signed by him on a special label. This was not a new practice, but it was as profitable as such things can be, especially as Taplin had established agencies all over the country and even in Ireland. The prices he charged show a handsome margin of profit, and this business probably netted him a small fortune. Drugs will always sell well, especially when backed by outrageous claims for their infallibility.

Taplin discovered his metier and followed it successfully, though he possibly did not succeed in his practice as a surgeon in Surrey, a practice that he may have neglected for his greater interest in sport and racing. He claims to have been a member of the Royal Hunt and circle for many years, and members may have pressed him to become a veterinarian. He began observations on horses and dogs about 1770, and 20 years later he decided to devote his whole time to this study, dropping human medicine altogether. He was established at Wokingham, but visited cases in Oxford, Surrey and in London. Finally, he moved to London in 1794, and built what he called an Equestrian Receptacle in Edgware Road, an institution for which he solicited annual subscriptions of one guinea, that did not include treatment. Clients could send animals at livery, sale on commission, or for treatment, shoeing, etc. Taplin modestly claimed that he had never had a failure. Every animal he treated recovered. Ten years of such unparalleled success certainly justified his retirement and in 1803 he went to live at Sloane Square, where he published "The Sporting Dictionary" and "The Sportsman's Cabinet." He was then 63 and some of the articles in the "Dictionary" are still worth reading to-day for the pregnancy of their observation.

Though all this weight of criticism was flung at him, his success was so obvious that some unidentified but unprincipled adventurer perpetuated a fraud on his name by bringing out a book with the title "Taplin Improved" in 1790, a completely valueless work.

Taplin lived one of those odd lives that were common both in life and literature in the eighteenth century, and finished pitiably by losing his mind through domestic affliction at the end. He died in 1807.

Such were three of the many learned and unlearned, who were or professed to be farriers, and who wrote about their job in the eighteenth century.

ARTIFICIAL INSEMINATION OF POULTRY

Large-scale Application by the Animal Health Trust

Owing to the outbreak of fowl pest, the Ministry of Agriculture refused permission for cockerels from the farms of competitors in the Goosnargh (Lancs) pullet progeny and production trials to be moved on to the trials site for mating during February and March. On the advice of the Animal Health Trust, and, it is stated, with the approval of the Ministry of Agriculture, the trials are to be continued by the application of the process of artificial insemination, as the only alternative to closing the progeny test part of the trials.*

Ten stock cockerels of varying breeds have been purchased in Scotland and are being held in isolation at the trials site for testing for fowl pest. Further cockerels will be required and will be purchased and tested.

The trust will supervise the complete operation. Following a "pilot" experiment a team of workers from the Poultry Research Station will visit the trials for about four weeks and will carry out the collection of semen from the cockerels and the insemination of the 1,200 pullets, representing entries from 100 breeders from all over the country.

Hitherto, artificial insemination for poultry has been confined to small-scale experiments, and, indeed, there is little information on many aspects of the subject. The project, therefore, should provide important information and experience, from both the scientific and the practical viewpoints. At the end of the trial the stock cockerels will be presented to the Station, where it is intended to carry out further experimental work on dilution, storage time and other factors which may be brought to light during the work.

* In February of the year following their entry the owner (in normal circumstances) sends one cockerel to the trial, which is mated to his pen, and the first hundred eggs are collected from each pen and incubated. The percentage fertility and hachability is then worked out and the points are awarded. The cockerels are destroyed and, by randomisation, 20 pullet chicks are selected. Points are also awarded for livability during rearing. When nearing production, the 20 pullets from each pen are housed (on the built-up litter system) and their record of production is kept.

THE VETERINARY RECORD
March 3, 1951

DOMESTIC FOOD PRODUCTION

THE deplorable meat shortage and the reduction in home egg production because of the destruction of large numbers of birds in outbreaks of fowl pest lead us to consider the possibilities of increasing the supplies of meat and eggs from sources in this country. In the critical days of 1940 attention was drawn to the potentialities of domestic food production and the need to increase supplies of high quality protein is once more an urgent problem. Pigs and poultry may be, in part, the answer.

The widespread incidence of fowl pest and the increase in the number of outbreaks of swine fever point to the logic of maintaining susceptible birds and animals in relatively small units; the domestic pig and poultry keeper meet this requirement. The need is urgent for more and more people to assist in making this valuable contribution to the country's food supply.

It has been said many times that the pig is the quickest and most economical source of meat production. Pig clubs, whether of the private enterprise or co-operative type, are not only directly assisting their own members but are doing a job of national importance. The same may be said of the domestic poultry keepers, many of whom had hoped by now to have been able to reconvert the hen-run to its former use.

Recognition by official circles of the need for continued effort from domestic food producers has been shown in the recent appointment by the Minister of Agriculture of a "National Council for Domestic Food Production," its terms of reference including co-ordination of the work of the various national organisations engaged in domestic food production in England and Wales, and consideration of measures for its development and encouragement.

The veterinary profession, moreover, has not been dilatory in this field; evidence presented on behalf of the Association to the Committee, whose report resulted in the establishment of the above Council, was sufficiently acceptable to that Committee for it to recommend the inclusion of a veterinary member as one of the Council's personnel—a recommendation the Minister, we are pleased to say, has seen fit to implement. Within the profession itself interest is not lacking; this is evident from the publication elsewhere in this issue of a paper, recently presented to a Division and devoted to the problem of "backyard" poultry and rabbits.

Probably the greatest contribution the profession can make is in a continuance of its efforts to educate domestic pig, poultry and rabbit keepers in matters of hygiene, preventive medicine and general animal management, remembering that many of the people now engaged in this work have had no previous agricultural background. The death-rate in pigs and poultry in this country at the present time, associated with epidemic disease, serves only to underline the importance of the work the profession can undertake in the realm of domestic food production.

Weekly Wisdom

Governments have ruled by force, and few have been able to live without moral sanctions, or to make their subjects believe that these sanctions consecrated them, but no free government has ever yet so lived and thriven, for it is by a reverence for the Powers Unseen and Eternal which impose these sanctions, that the powers of evil have been, however imperfectly, kept at bay and the fabric of society held together.—Lord Bryce, "Modern Democracies" (1921).

CLINICAL COMMUNICATIONS

REACTIONS IN CATTLE AFTER VACCINATION WITH LAPINISED RINDERPEST VIRUS

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The reaction in susceptible cattle following vaccination with lapinised rinderpest virus appears to depend largely upon the attenuation of the virus. After 100 serial passages Nakamura, Wagatuma and Fukusho (1938) showed that it was still virulent for calves. Haddow and Idnani (1948) reported slight reaction after 160 passages. More recently mild thermal reactions in adult cattle have been described by Fulton (1949) and more severe reactions in calves by Watson (1950).

In Uganda 18,400 cattle were vaccinated with lapinised virus in 1950. Eight test herds, each containing 25 animals, were set up to observe any possible reaction. In addition to these, herd histories from 2,165 adults and 562 calves in 43 herds were recorded.

Results

Reactions occurred amongst 18·6 per cent. of the adults and 23·1 per cent. of the calves in the test herds, while the herd histories other than in the test herds showed 5·9 per cent. of adults and 30·6 per cent. of the calves reacting. Generally the symptoms appeared about the ninth day and lasted for about five days. They consisted of a cough, lachrymation, diarrhoea and rise in temperature. Forty adults were taken at random from the test herds and the temperatures of these were taken early in the morning for 21 days. Table I shows the numbers of cattle with temperatures over 100° F

Table I

Temp. °F.	Days after vaccination										
	1	2	3	4	5	6	7	8	9	10	11
100	4	5	8	12	15	14	18	15	24	22	23
101	—	—	1	4	6	5	8	12	15	12	6
102	—	—	—	1	2	2	3	5	7	5	2
103	—	—	—	—	—	—	—	2	2	1	—
104	—	—	—	—	—	—	—	—	1	—	—

Temp. °F.	Days after vaccination									
	12	13	14	15	16	17	18	19	20	21
100	20	15	24	18	13	7	12	8	15	11
101	6	2	3	3	6	4	1	1	3	1
102	1	—	1	1	—	—	—	—	—	—
103	—	—	—	—	—	—	—	—	—	—
104	—	—	—	—	—	—	—	—	—	—

It will be seen that the maximum temperature rise occurred between the eighth and tenth days and that the rise to the maximum was more rapid than the fall thereafter.

One month after vaccination six animals which had been vaccinated with lapinised virus and two unvaccinated controls received a challenge of virulent virus. One of the controls died on the 20th day after challenge with typical symptoms and *post-mortem* findings of rinderpest. No definite reaction either systemic or thermal occurred in the other animals. It is hoped to challenge batches of vaccinated cattle at intervals.

(*References at foot of next colum*)

A NOTE ON THE SOMALI METHOD OF VACCINATION AGAINST CONTAGIOUS BOVINE PLEUROPNEUMONIA

R. G. MARES, M.R.C.V.S.,

Veterinary Department, Burao, Somaliland Protectorate

The disease is well recognised by the Somali cattle owner in the west of the Protectorate, and also by those Somalis living in the Ogaden to the south. When an animal dies from the disease a solid piece of affected lung is removed and buried or kept in a cool, shaded place for one or two days. The length of time is variable, depending on the ideas of the individual and also, if the diseased lung has had to be fetched from a distance, on the time taken on the journey. In some cases, mainly in Ogaden, the lung is used fresh.

The chosen piece of lung is minced into pieces the size of maize grains and washed in about 1 pint of water to which is added ½ oz. of salt. If, as often happens, water and salt are scarce, this washing is omitted.

All the animals in the herd, except those with pneumonic symptoms, are cut on the face half way between the eyes and the nostrils. The cut (½ inch) is made down to the bone and a piece of the minced lung is inserted.

There is usually some local reaction which takes three to five days to abate. From the fifth to the seventh day the reaction proper is expected. When it occurs the reacting tissue is excised radically, exposing the frontal bones for an area of 6 by 4 inches. The boundary of the tissue to be removed is first demarcated by a line with a hot iron. After the swelling, which constitutes the reaction, has been cut out in this manner the periosteum on the exposed frontals is carefully and painfully scraped off. An iron at dull red heat is now passed over flush to the bone and then the skin edges are seared with care.

Healing is naturally prolonged and I have seen bare frontals a year after vaccination. When healing is complete a small horny excrescence is left in the centre of the face; the presence of this enhances the value of an animal in good condition.

When the wound goes septic there is very great facial swelling, often worse than that shown in the photograph. This is treated by line firing as shown in the profile photograph.

It is as well to emphasise that the Somali is not normally a cruel man with his animals, but is driven to this excess in an effort to save his stock which are his only wealth; the method is certainly effective and the stock owner will pay up to 1s. per head to the native vaccinator for the job. The vaccination makes his herd very conspicuous and thus easily detected for quarantine control, a measure generally unpopular with these nomadic people. He is prepared to be conspicuous, however, for the sake of his stock.

All the manipulations are done in the cast position, even the initial skin incision. This is surprising, as these cattle are very tractable. A rope is passed round horns and chest in half hitches and is then taken to the hind fetlocks, which are tied together before pulling the animal over. Sometimes the hind fetlocks are tied and the animal cast by pulling here only and having a strong man at the head.

(*Continued from previous column*)

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Fig. I.—Close-up of lesion from Somali vaccination for contagious bovine pleuropneumonia.

Fig. II.—Lesion in Profile.

ABSTRACTS

[The Identification of *Cl. oedematiens* and an Experimental Investigation of its Role in Black Disease. Jamieson, S. (1949.) *J. Path. & Bact.* **61.** 389–402.]

The author records the results of his investigations concerning the identification of 17 strains of *Cl. oedematiens* isolated from cases of black disease in sheep, the latent distribution of this organism in different animal species and the experimental reproduction of the disease in laboratory animals. Using specific toxin-antitoxin neutralisation tests on solid media (Petrie & Steabben, 1943, *Brit. Med. J.*, *i*, 377) and lecithinase production in Weinberg V.F. broth (Oakley *et al.*, 1947, *J. Gen. Microbiol*, *ii*, 334) as a basis for differentiation, all 17 strains were found to fall into *Cl. oedematiens*, Type B. No strain fermented glycerol. Latent spores of *Cl. oedematiens* were found present in the livers of 17·1 per cent. of animals and birds grazing infected pastures and in only 1·3 per cent. of those on non-infected pastures. The fact that 75 per cent. and 6·7 per cent. of cattle grazing infected and non-infected pastures respectively contained latent spores in their livers, Jamieson maintains, suggests that black disease probably affects bovines as well as sheep in this country. Successful infection of laboratory animals by various routes with washed spores of *Cl. oedematiens* is recorded, the spores being recovered from spleen, liver, bone marrow and muscle in order of frequency. Attempts to establish typical black disease in rabbits by intravenous inoculation and by feeding large numbers (up to 40 million) of washed spores followed later by feeding cercariae of *Fasciola hepatica* failed. On the other hand, attempts to do this in guinea-pigs were successful following infection via either the intraperitoneal or the intravenous route and subsequent feeding of cercariae.

Discussing his results, Jamieson claims this to be the first successful reproduction of the disease in support of Turner's original theory that black disease is due to the activation of latent spores of *Cl. oedematiens* in the necrotic liver lesions caused by wandering immature flukes. He further regards the techniques of Petrie and Steabben together with the lecithinase tests as invaluable in the diagnosis of anaerobic diseases of sheep and cattle where mixed infections are common.

W. T. R.

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[Lead as a Nutritional Hazard to Farm Animals. I. Determination of Lead in Biological Material. Blaxter, K.L., & Allcroft, Ruth. (1950.) *J. comp. Path.* **60.** 133.]

An analytical method for the detection of lead in biological material is described in detail. Almost the entire operation is carried out in a single test tube, and blood or soft tissues can be examined within the hour.

The method is based upon the property of dithezone (diphenylthiocarbozone) to form a metallic complex with lead which produces a red colour in chloroform. The biological material has to be subjected to a series of processes in order to prevent interference of the reaction by other metals. In principle these processes consist of subjecting the material to a rapid wet oxidation, and the addition of ammonium citrate to prevent precipitation of earthy phosphates and interference by iron. Next, the solution is rendered alkaline with ammonia, and cyanide is added to prevent interference by other metals. Chloroform and dithezone are added and the excess reagent is removed by alkaline cyanide. The extinction coefficient of the chloroform layer is then read photometrically.

Some modification of the process is required for materials high in calcium and phosphorus content and for urine. The percentage error of the method is assessed at ±3·2 per cent. when the mean quantity estimated is 10μg.

D. W. J.

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[Fox Encephalitis (Infectious Canine Hepatitis) in the Dog. Chaddock, T. T., & Carlson, W. E. (1950.) *N. Amer. Vet* **31.** 35–41.]

The authors record their experience of this virus disease as it affects foxes and dogs. In the fox it is essentially a disease of the central nervous system and the symptoms are referable to irritation or damage to the brain and spinal cord, the main *post-mortem* feature being haemorrhage. The microscopic pathology reveals presence of intranuclear inclusion bodies in the brain, liver, adrenal, kidney and tonsil. Vaccination with formolised tissue vaccine followed by a virus and serum mixture produces a lasting immunity and the disease itself can be controlled successfully by injection of hyperimmune serum.

Experimental work in dogs shows that young dogs are more susceptible and the mortality is high. Symptoms very clearly resemble those of distemper and in experimentally infected dogs there is a sharp rise in temperature to 103° to 106° F. for five to ten days, purulent discharge from eyes and nose, and general malaise. Seventy-five per cent. of affected animals are said to recover promptly while the remainder succumb. In the terminal stage of the disease neurological symptoms, varying from blinking of the eyes to violent convulsions and champing of the jaws, are presented while chorea-like symptoms, as in distemper, are also in evidence. The most striking differences are that in fox encephalitis (infectious canine hepatitis) the animals remain on feed until 24 to 48 hours prior to death, and while the course of distemper is considered to be three to four weeks, dogs infected with fox encephalitis usually are dead within a fortnight or completely recovered by three weeks. *Post-mortem* features are those of haemorrhage, especially in the subendocardium which is diagnostic, with mottling of the liver, enlargement of the mesenteric lymph glands, oedema of the lungs, ascitic fluid in the abdomen and blood-tinged faeces in the small intestine as typical but not diagnostic features.

A rapid diagnosis of fox encephalitis has been made by the injection of macerated brain or liver material from the suspect intraocularly in 0·5 c.c. quantities into the anterior chamber of the eye of a young dog or a young fox. A positive diagnosis can be made within a period of three days and confirmed by the finding of intranuclear inclusion bodies in the epithelium of the anterior chamber.

The injection of 1 c.c. of fox encephalitis hyperimmune anti-serum used therapeutically has proved to be effective when given in 1 c.c. quantities for each 5 lb. of bodyweight of the suspected animal. Response to the therapeutic use of this material will occur within 12 to 24 hours.

J. MacK.

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[Primary Abdominal Pregnancy in a Cat. (Trans. Title). Dosza, L. *Schweiz. Arch. Tierhlk.* **92.** 106–110.]

Two weeks after giving birth to three live kittens the cat became ill. Laparotomy was performed and three structures, each consisting of a well-developed foetus with foetal membranes, were removed from the mesentery. The cat died soon after the operation, and *post-mortem* examination confirmed that there was no trace of a rupture of the uterus and no scar on its surface. The author considers it to be a proved case of extra-uterine pregnancy.

R. M.

REPORT

VETERINARY DEPARTMENT OF NIGERIA: ANNUAL REPORT FOR THE YEAR 1948

The Veterinary Department of Nigeria has an authorised establishment of 39 Veterinary Officers and 31 other grades, and is divided into three administrative divisions: Laboratory, Education and Field, with a Headquarters staff of Director and Deputy Director. During the year Mr. W. G. Beaton was promoted from Deputy Director to Director, and Mr. R. S. Marshall from Principal, Veterinary School, to Deputy Director. Mr. R. J. Simmons, C.B.E., the late Director, was appointed Animal Health Adviser to the Secretary of State. Four Senior Veterinary Officers retired during the year and two more have signified their intention of retiring next year. The retirement of so many senior men is a serious loss and must affect the efficient running of the department. These men take with them into retirement all the specialised knowledge of local animal diseases and conditions acquired during their many years of service.

Twelve vacancies exist in the authorised strength of the Field Staff and one in the Education Division. The improvement in the conditions of service recently introduced in Nigeria should make this service more attractive to young men looking for a free, useful and interesting career and a secure pension on retirement.

The main work of the field staff has continued to be the suppression of the major animal epizootics by the method of prophylactic immunisation on as large a scale as possible. In the Northern Region alone—by far the largest of the three Political Divisions of the country and the main cattle-raising area—nearly 1,000,000 cattle were immunised against rinderpest, 107,405 against contagious bovine pleuro-pneumonia, 998,631 against blackquarter, 15,000 against haemorrhagic septicaemia, and 590,239 against anthrax. A more comprehensive view of this work can be obtained from the figures given by the Assistant Director of Laboratory Services. He records that during the year a total of 3,294,071 doses of 12 different vaccines were issued from the laboratory for use in the field. The absence of any large-scale outbreaks of rinderpest and other epizootics, which only a few years ago were decimating the herds in periodically occurring waves, is ample evidence of the soundness of this policy and the energy with which it is being carried out. The satisfactory position with regard to rinderpest and other diseases is not, however, maintained in the case of bovine pleuro-pneumonia, for outbreaks of this disease were reported in almost every province of the Northern Region. Now that rinderpest, once the great killer, is under control, the need for an effective means of dealing with this highly fatal and insidious disease becomes more clamorous and urgent than ever. The Assistant Director of Laboratory Services, in his section of the report, emphasises the serious nature of this disease and writes that a considerable amount of research is indicated into many aspects of it. There appears an urgent need for a concerted and sustained attack on this serious disease by a team of research workers of national and even international standing in order to devise an effective and practicable means of bringing it under control and finally eradicating it from Africa. In one outbreak of pleuro-pneumonia, dealt with personally by Mr. Mettam, Assistant Director, Laboratory Services, an ultimate loss of 62·5 per cent. was experienced and this in spite of vaccination, which, however, was carried out after the disease had been established in the herd.

Another disease of serious economic importance to Nigeria is trypanosomiasis. Although not occurring in spectacular epidemics, the disease, nevertheless, in the aggregate causes heavy losses in some areas. In addition to the death-rate, heaviest at the beginning of the rains, there is a great loss of economic productivity among animals which develop the disease in a chronic form. The new drug Antrycide was tried out as a curative agent against both *T. congolense* and *T. vivax* infections in cattle. Mr. Mettam, summarising the results of his experiments, writes: "Owing to the limited supply of the drug only comparatively small experiments were possible. The results in the treatment of *T. congolense* infection were very satisfactory. *T. vivax* was found to be more resistant to the action of the drug than *T. congolense* and unless a higher dosage rate is used there is a very real danger of creating drug-resistant strains." Mr. Mettam found also that the symptoms following the administration of the drug could be very alarming. Even healthy animals showed similar symptoms, although milder in degree. The dosage rate varied between 1·0 mg., 2·0 mg. and 5·0 mg. per kg. live weight.

Among other activities of the department must be mentioned: (*a*) Animal clinics. These are established at many principal centres throughout the country and by the free treatment and advice which is given at these places much animal suffering is avoided. In the Northern Region alone 126,311 daily attendances are recorded from the various clinics established in that area. The patients included horses, cattle, sheep, donkeys, camels, goats, dogs, cats, fowls and pigs.

(*b*) Treatment for helminthiasis. This service has been extended and travelling African Veterinary Assistants covered a wide range of country. In the Northern Region alone 156,384 animals (calves, goats and sheep) received treatment during the year.

(*c*) Animal husbandry. Propaganda to reduce the number of scrub bulls is being continued and facilities are offered both at immunisation centres and by travelling African operators for the free castration of all inferior male stock.

Supervision of the movements of trade cattle to markets and slaughtering places has continued and besides checking some of the cruelty inseparable from long treks by road and rail, this service is a useful control over the spread of disease. It is now the practice to give all slaughter cattle a dose of anthrax vaccine before railing them to southern markets. Tsetse fly surveys have also been carried out along these trade routes.

The department is doing useful work also in establishing dairy herds for the supply of fresh milk to schools and hospitals. The department's stock farm at Vom has continued to function and important work is being carried out in pasture improvement, rotational grazing, cultivation of fodder crops, selective breeding for milk production and pig breeding. It is recorded that the Large White breed of pig has continued to prove its suitability and economic worth under tropical conditions for pork and bacon production.

(*d*) Hides and skins inspection. The value of the export trade in hides and skins during the year was £3,294,620 and the work of the veterinary department over the past years has done much to increase the value of this trade.

(*e*) Meat inspection. There appears to be an urgent need for more control to be exerted over the methods of slaughtering in the thousands of small and large markets throughout the country. More especially is this the case in the Eastern Region where the Assistant Director (Mr. Hay-Barclay) reports: "Apart from the large numbers of cattle, sheep and goats some 4,000 horses are sacrificed annually under the most barbaric conditions." Something must be done to improve the present unsatisfactory state of affairs, but the matter is political more than veterinary.

Laboratory Division.—In spite of the enormous amount of

work involved in the production of over 3,000,000 doses of 12 different vaccines, it is pleasing to note that Mr. Mettam and his staff have been able to tackle some important research problems.

Experiments with lapinised rinderpest vaccine were commenced, with a strain obtained from Kenya. This vaccine, now in its 803rd passage through rabbits, was tried out on Zebu cattle and native goats, but the results were unsatisfactory. A more successful experiment has, however, since been completed using vaccine prepared by a modified technique (Mr. A. L. C. Thorpe, Research Officer). There is much more in this division of the report that is worth noting but space forbids more than mere tabulation: Attempts to isolate local strains of *Brucella abortus*, work on cutaneous actinomycosis (streptothricosis), investigations into a mortality among pigs from suspected poisoning (probably the leaves of the mahogany tree), work on methods of production of anthrax and blackquarter vaccines, on avian tuberculosis and on pyo-peritonitis in goats inoculated with rinderpest virus. A condition in cattle known as wet season disease was investigated and seems to warrant further research.

Sub-Division of Biochemistry.—In this sub-division preliminary studies were undertaken by Mr. Gardner, V.R.O., into the availability of the commoner minerals in pasture. Analysis of local foodstuffs was also undertaken.

Sub-Division of Parasitology.—Mr. K. Unsworth, V.E.O., carried out a tick survey and investigated the occurrence of the larvae of *Oestrus ovis* in the nasal cavities of goats.

Education.—Mr. D. E. Macgregor acted as Principal of the Veterinary School during the year.

In a country like Nigeria, with a large and mainly nomadic pastoral community, an adequate staff of properly trained African assistants is an indispensable requirement if the work of the department is to be fully extended. It is to be regretted, therefore, that the Acting Principal of the school has to write: "We have to face the fact that the veterinary profession holds little attraction for local graduates in this country, when compared with other professions of similar status. . . . Medical graduates have a lucrative field in private practice denied to their veterinary confrères."

At the beginning of the year four students were attending the course for Assistant Veterinary Officers, 22 the course for Senior Veterinary Assistants and 14 the course for Junior Veterinary Assistants.

The whole report is a record of satisfactory progress in all branches of the department's activities and of a volume of work only possible by the loyal and harmonious co-operation of all members of the staff under the able and energetic guidance of the Director and his Deputy.

W. W. H.

REVIEW

[Practical Farriery. C. Richardson, F.W.C.F. London: Pitman. Pp. 74. Price 8s. 6d.]

There can be no future for the horse in this country if we lose the art of fitting comfortable shoes to his feet. This art may well be lost in the next few years if we cannot find some young apprentices for our farriers' shops. Mr. Richardson, in his book, offers much encouragement to these youngsters we so sorely need. There is no question that he writes with authority and the experience upon which that authority is based has enabled him to make "beautifully simple" presentation of the subject with which he deals so effectively.

A short, but adequate, anatomical study is followed by a description of those lamenesses which may be helped by good shoeing. There is room here, of course, for much controversy, but the author very wisely leaves it out. The descriptions given, explanations as to cause and methods of treatment make up a fair selection from conventional opinion. In recommending treatment there is perhaps a small fault shared by most books of this type and by many of a much more technical nature. A treatment is given for each disease but the reader is not told that certain of these treatments are conventional but ineffectual. The veterinary surgeon need have no fear that the young farrier is being encouraged to become a quack. The so-called treatments are confined entirely to methods of shoeing, but there is surprisingly little about the making of a horse shoe.

There is a great deal in the book of value to those who will never shoe a horse. No horseman will waste his time if he reads it and it will be very helpful to pony club members taking their tests.

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Also received: **My Best Animal Story** (Faber & Faber, Ltd., 24, Russell Square, London, W.C.1. Price 8s. 6d. net).

VETERINARY SURGEONS ACT, 1948

Supplementary Veterinary Register

The Council of the Royal College of Veterinary Surgeons has directed the Registrar under the above Act to register in the Supplementary Veterinary Register the names of the persons set out below.

This is the tenth list of registrations and the absence of the name of any person who has made application in prescribed form before the prescribed date does not imply that such applicant has been refused registration.

The tenth list consists of further persons in whose cases the Council is satisfied that the requirements of the Act have been met.

Further lists of registrations in the Supplementary Veterinary Register will be published.

Tenth List of Registrations

Name *Address*

Date of Registration—*November 30th*, 1950.

Hall, Ian Gordon, Lyndhurst, St. John's Street, Huntingdon.

Date of Registration—*January 22nd*, 1951.

Davies, Cyril Clive, 5, The Ridgeway, Woodingdean, Sussex.

Goldsmith, Alec, The Old Manor House, Norton, nr. Letchworth, Hertfordshire.

Date of Registration—*February 16th*, 1951.

Apted, Victor Albert, 55, Fellows Road, Hampstead, N.W.3.

Brown, Leslie Thomas, 83, Windermere Avenue, Elm Park, Essex.

Misselbrook, Graham Montrose, 1082, London Road, Leigh-on-Sea, Essex.

Mohr, Ernest William, 77, Reynolds Avenue, Chadwell Heath, Essex.

Morgan, Frederick John Henry, 19, Dawlish Avenue, Palmers Green, N.13.

Paling-Slater, Arthur, 120, Greencroft Gardens, West Hampstead, N.W.6.

Saward, Jacob John, 8, Portland Road, Hove 3, Sussex.

Worth, Thomas Harold, 7, Newton Road, Ipswich, Suffolk.

QUESTIONS IN PARLIAMENT

Imported Horses—Losses in Transit

Colonel Clarke (February 19th) asked the Minister of Agriculture for what purpose he sanctioned the importation of the horses which arrived at Birkenhead in s.s. *Clarina* on Wednesday, February 7th, consigned respectively to Manchester and Liverpool; whether he is aware that a substantial number of these horses died *en route* as a result of exhaustion or injury and that others had to be slaughtered on arrival for similar reasons; and whether in these circumstances he will consider amending the present regulations relating to the use of horseflesh obtained from imported aged horses.

Mr. T. Williams: I have received a report on this distressing incident, from which it would appear that the large number of casualties was due to the exceptionally heavy weather encountered on the voyage. The importation of these horses did not require my sanction, and I do not think that it would be practicable to prevent such incidents by making regulations relating to the use of horseflesh from imported horses. Now that a trade in this class of horses has developed, however, I am considering whether to make an Order under the Diseases of Animals Act for the better protection of horses during transit to this country.

On February 22nd Mr. Peter Freeman asked the Minister of Agriculture whether his attention has been called to a shipment of 71 horses and other animals sent from Limerick to Birkenhead early in February, of which 18 collapsed, died and were thrown overboard during the sea voyage, three more were found dead on arrival at Birkenhead, seven others had broken legs and other serious injuries and had to be destroyed on arrival, another collapsed and died on the quayside and two goats were found to be dead on arrival; and, in view of the fact that repeated cases of this kind have been brought to his notice, what steps are being taken to prevent a recurrence.

In the same connection, Sir William Darling asked the Minister whether, in view of the fact that these were horses imported solely for the meat trade, he would take powers to prevent such importations henceforward unless prior satisfaction can be given that the transport, unloading and subsequent slaughter will be carried out with due regard to avoiding unnecessary cruelty; Brigadier Medlicott asked if the Minister would make a statement as to the steps which are being taken to prevent such incidents in the future, and Mr. Hastings asked the Minister whether he will take steps to review the regulations relating to the transport of horses in merchant vessels, with a view to ensuring that such extensive and unnecessary cruelty shall be avoided.

Mr. T. Williams: I would refer the hon. Members to the reply given to the hon. and gallant Member for East Grinstead (Colonel Clarke) on February 19th.

Mr. Freeman: I have seen that answer, but is it not a fact that in these cases my right hon. Friend informed me that these journeys would not take place if the weather was bad? Is it not a fact that gale warnings were given on the day previous to the vessel sailing and that the vessel was delayed for four hours? Is he awafe that I have a signed statement by the captain saying that he delayed his vessel for six hours in the Shannon and that the vessel took four days and nights to do the journey from Ireland? Is he further aware that at this time of the year the weather is always bad?

Mr. Speaker: This is giving a lot of information and not asking for it.

Mr. Freeman: Will my right hon. Friend arrange for a public inquiry?

Mr. Williams: My hon. Friend has suggested that repeated cases of this kind have been brought to my notice. This is the first case affecting imported horses that has been reported. I understand that the *Clarina* was inspected before sailing by Irish Government officials, who certified that the horses were fit to work and to travel and that the fittings of the vessel were up to their usual standards. The large number of casualties on this voyage is attributed to the exceptional heavy weather experienced.

Brigadier Medlicott: Is the Minister aware that while we are continuing to import horses for slaughter from Ireland, we are also exporting horses for slaughter in Belgium? Should we not cut down these exports and reduce the over-all volume of this traffic?

Mr. Williams: The hon. Member is in error. We are not exporting horses for slaughter to Belgium.

Mr. Anthony Greenwood: Is my right hon. Friend aware that the man to whom most of these unfortunate animals are consigned is a man with an extremely bad record? He has at one time or another received a sentence of three years' imprisonment, has been fined £2,000, has had his butcher's licence revoked and has been fined for cruelty to animals. Is my right hon. Friend satisfied that the regulations are adequate to ensure safe transportation of these animals and to prevent them falling into the hands of someone like that when they arrive?

Mr. Williams: My hon. Friend knows much more about this person than I do. I said in my original reply, on February 19th, that I am considering whether to make an order under the Diseases of Animals Acts for the better protection of horses during their transit to this country, but hon. Members will appreciate that I will have to consult both the Eire Government and the Government of Northern Ireland.

Sir R. Ross: Is the Minister not aware that the horses to which these Questions refer came from Eire and were shipped under the sovereignty of the Irish Republic? (Laughter.) What is funny about that? No horses which suffered in this way were shipped from Northern Ireland.

Mr. Hastings: Is my right hon. Friend aware that all people of good will in this country are looking to him to prevent such atrocities?

Mr. Williams: The House will be aware that I cannot prevent atrocities of this kind if the regulations are made by the Irish Republic. I have already said that we are looking round the situation to see whether or not anything can be done, but we are not responsible for any kind of suffering.

Lieut.-Commander Braithwaite: Is it not quite clear, whatever the record of this gentleman in Manchester or of Eire in relation to these unfortunate animals being shipped in these circumstances, that this ship should not have been permitted to sail in view of the weather report? Is not that the whole point?

Mr. Williams: It is not the responsibility of the British Government to decide whether or not the boat should sail.

Mr. Poole: Is it not a fact that the subsequent veterinary examination revealed that many of these horses were knocked down and trampled to death, and will my right hon. Friend, in consultation with his right hon. Friend the Minister of Transport, enquire whether there was correct supervision on this vessel, which, after all, does sail under the authority of the Minister of Transport?

Mr. Williams: I will be very happy to consult with my right hon. Friend, because I am just as anxious as anyone to prevent any unnecessary suffering anywhere.

Several Hon. Members rose——

Mr. Speaker: We cannot proceed any further with this matter.

In a written reply to Mr. Anthony Greenwood, who asked whether the Minister would request that steps should be taken to prevent aged and infirm horses being shipped under such conditions from Eire to England for the meat trade, Mr. Williams stated that his Department had already been in touch with the Department of Agriculture in Dublin on the question of making regulations to govern the transit of horses by sea from Ireland to Great Britain. He understood that none of the horses on the s.s. *Clarina* was aged or infirm.

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Cattle, Scotland (Transport)

Sir T. Moore (February 20th) asked the Minister of Food what plans he has in mind for effecting an immediate improvement in the transit of cattle in Scotland in order to prevent unnecessary suffering and deterioration in the value of the meat.

Mr. F. Willey: I have made enquiries, but I can find no evidence that the arrangements made by my Department for the movement of cattle in Scotland cause unnecessary suffering to animals or lead to a deterioration in the value of the carcases. I cannot therefore accept the implication in the hon. and gallant Member's Question.

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Fowl Pest

Mr. Dye (February 19th) asked the Minister of Food what poultry it is intended to import, either directly through his Department or through private traders, during the months of March and April from countries where fowl pest is endemic.

Mr. Webb: My Department are not importing poultry from any source. Private traders are free to import poultry on open general licence from France and Belgium and on block licence from Poland, but I have no knowledge of the quantities likely to be imported during March and April. There are no imports of poultry from Hungary at present. I should emphasise that all these imports are subject to stringent safeguards, approved by the Ministry of Agriculture.

Mr. Dye: Is it not a fact that these safeguards have not so far prevented outbreaks of fowl pest in this country as a result of these imports? Bearing in mind that an arrangement has been made

whereby America does not import birds which are infested with fowl pest, why not stop forthwith imports from Continental countries also?

Mr. Webb: My hon. Friend ought to know that on all the evidence so far available it seems to me that the present outbreak of fowl pest arose not from any of these sources of imports, but from American sources of imports.

Mr. Alport: Is any poultry at present being imported from the United States in any shape or form?

Mr. Webb: Not for direct sale to consumers.

Mr. Dye: Has not my right hon. Friend read the answer which his right hon. Friend the Minister of Agriculture gave to a Question on this very subject last Thursday, namely, that imports from Continental countries are proved beyond doubt to be a source of infestation?

Mr. Webb: I am in close contact with my right hon. Friend on this matter, but we have to balance two very conflicting and very difficult considerations. The need for imports of poultry is very real. As far as the risk of fowl pest is concerned, my right hon. Friend and I agreed to carry out certain quite stringent regulations, and I am quite prepared to co-operate with him even if it means, in the end, some sacrifice of our imports in order to protect the interests of our own producers.

Mr. Alport: Is poultry still being imported from the U.S.A. direct to American troops serving in this country?

Mr. Webb: That question ought to be put to some other Minister.

Mr. Bossom (February 22nd) asked the Minister of Agriculture how many birds have been ordered to be killed due to fowl pest in Great Britain; and how many birds from pest-infected countries have been imported during the same time.

Mr. T. Williams: The number of birds slaughtered between February, 1947, and the end of 1950 by direction of my Department on account of fowl pest is about 400,000. A record of the number of birds imported into Great Britain from countries where the disease is prevalent is not kept, but about 7,800 tons of fowls, 13,000 tons of geese and ducks and 8,300 tons of turkeys came from such countries during the period. At a conservative estimate, there could not have been less than 9,000,000 birds imported.

Captain Duncan: Are the fowls from Gambia included in that total?

Mr. Williams: I am not aware that there have been any fowls from Gambia.

Captain Duncan: Will the right hon. Gentlemen read the answer given by the Secretary of State for the Colonies in the House yesterday?

Sir H. Williams: Why is it that the order the right hon. Gentleman made in December on this subject has not yet been presented to Parliament?

Mr. Williams: Perhaps the hon. Member will give me notice of that.

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Gambia (Poultry Disease)

Mr. Gammans (February 21st) asked the Secretary of State for the Colonies what reports he has received of outbreaks of fowl pest or other disease in the Gambia; and what steps he is taking to deal with them.

Mr. J. Griffiths: Common poultry diseases such as fowl typhoid have been known to exist in the Gambia for a considerable time. Fowl pest was first diagnosed and reported at the end of 1949. It has not been possible to bring these diseases under general control. I understand, however, that the Colonial Development Corporation have taken measures for the effective isolation of their poultry farm, where trouble has been confined to a single outbreak of fowl typhoid which is now under control.

Mr. Gammans: Can the right hon. Gentleman assure us that the somewhat disappointing results of the Colonial Development Corporation Scheme which the Minister of Food revealed last week have nothing much to do with the question of disease?

Mr. Griffiths: That is another question.

Mr. John Hynd: Can my right hon. Friend give us any information about the extent to which fowl pest in the Gambia has necessitated the destruction of fowls?

Mr. Griffiths: I should like notice of that question.

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Meat Inspection Committee (Report)

Mr. Boardman (February 20th) asked the Minister of Food whether the Inter-departmental Committee on Meat Inspection has yet reported; and at what date the report will be published.

Mr. Webb: The Committee submitted their report a day or two ago and I am now considering it in consultation with my right hon. Friends the Secretary of State for Scotland and the Minister of Health. I will make a statement about publication as soon as possible.

Livestock (Marketing)

Commander Maitland (February 19th) asked the Minister of Food if his consultations with experts on the long-term policy for meat supply include a review of the present system of marketing fat cattle and fat sheep in this country; and if he will make a statement.

Mr. Webb: The purpose of these consultations is to review the entire system of marketing and distribution of livestock and of both home-killed and imported meat. A statement will be made when the consultations have been completed and considered by the Government.

Commander Maitland: Will the right hon. Gentleman make sure that when these consultations take place they will take into account the importance of having the beasts slaughtered close to where they are marketed in order to avoid long railway journeys?

Mr. Webb: As the hon. and gallant Gentleman recognises, this is an immediate question. I am not at all satisfied with the present arrangements, including the one he has raised. We are doing our best to improve it. It is a different subject from the one in the Question.

Mr. Snadden: Will the question of an autumn glut of British-produced meat be taken into account in the discussion? Surely it is an absurdity to have a glut in the middle of a meat shortage.

Mr. Webb: Yes, indeed, Sir. Last autumn we just got by with the slaughterhouse facilities that we had. We are now taking steps to make sure that we shall be able to handle the increase which we hope to get next autumn.

Mr. Harrison: Is my right hon. Friend satisfied that there is proper supervision over the grading of meat in this country, and that there is no deliberate upgrading for the purposes of extracting higher prices?

Mr. Webb: I am not at all satisfied with our present grading system. There are serious defects in it, but every suggested improvement seems, on examination, to make the matter worse. The present grading system seems to be the best we can operate under the system of rationing.

Mr. Boothby: Why were not proper steps taken to secure an adequate supply of slaughterhouses long ago? There were repeated warnings.

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Pigs (Disease)

Brigadier Medlicott (February 22nd) asked the Minister of Agriculture if his attention has been drawn to the risk of pig pest being introduced into this country; and what steps are being taken by his Department to reduce the possibility of this disease being introduced by imports of pork from the Continent and by other means.

Mr. T. Williams: I presume that this Question relates to Teschen disease of pigs. My Department is fully alive to the danger of introducing this disease into the country. Local investigations are made by veterinary officers of my Department before pig products are imported from any new source, and the position in countries already supplying the market is closely watched. Neither pork nor bacon is being imported from any country where the disease is endemic.

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Horses and Machinery

Commander Maitland (February 22nd) asked the Minister of Agriculture what was the number of horses employed in the agricultural industry in 1939, and the latest convenient date; and what was the total number of internal combustion engines estimated to be in use by that industry on those dates.

Mr. T. Williams: The total number of horses used for agricultural purposes in the United Kingdom was 724,000 in June, 1939, and 397,000 in June, 1950. Internal combustion engines on farms in January, 1939, and January, 1950, are estimated to have numbered approximately 300,000 and 800,000 respectively.

GREYHOUND INDUSTRY IN EIRE: COMMITTEE OF INVESTIGATION APPOINTED

An advisory committee has been appointed by the Eire Minister for Agriculture "to ascertain and report on the position respecting coursing, greyhound racing, greyhound breeding and other related activities, and such measures, if any, as are considered desirable in the national interest for the better control and development thereof."

The Chairman of the Committee is Mr. Timothy O'Connell, M.Sc., F.R.C.Sc.I., formerly Assistant Secretary, Department of Agriculture, and the other members of the Committee are: Mr. Anthony Barry, Cork; Mr. James P. Frost, Cratloe, Co. Clare; Mr. Thomas J. Gallagher, B.Sc., A.R.C.Sc.I., Merrion, Dublin; Mr. John McGrath, Clontarf, Dublin; Mr. Joseph Mulhall, Kilkenny; Mr. Florence O'Leary, M.R.C.V.S., Senior Superintending Veterinary Inspector, Department of Agriculture; Mr. Thomas O'Sullivan, Ballyduff, Tralee; Mr. Peter P. Wilkinson, solicitor, Naas.

NOTES AND NEWS

Diary of Events

Mar. 7th.—Annual General Meeting of the Lancashire Division, N.V.M.A., at Manchester (Grand Hotel, Aytoun Street), 2.15 p.m.

Mar. 7th.—First General Meeting of the South-East Midlands V.M.A. at Northampton (Franklins Gardens Hotel), 2.30 p.m.

Mar. 8th.—Meeting of the East Midlands Division, N.V.M.A., at Sutton Bonington, 2.15 p.m.

Mar. 14th.—Meeting of the Editorial Committee, N.V.M.A., 3 p.m.; Editorial Executive, 1.30 p.m.

Mar. 15th.—Meeting of the Herts and Beds Division, N.V.M.A., at St. Albans (70, Holywell Hill), 7.30 p.m.

Mar. 16th.—Meeting of the North Wales Division, N.V.M.A., at Wrexham (Wynnstay Hotel), 2.30 p.m.

Mar. 22nd.—Annual General Meeting of the Western Counties Division, N.V.M.A., at Exeter (Imperial Hotel). Assemble for luncheon, 12.45 p.m.

Apr. 9th and 10th.—Annual Congress of the Laboratory Animals Bureau, in the University of Liverpool.

Sept. 23rd-29th.—Sixty-ninth Annual General Meeting and Congress of the National Veterinary Medical Association, at Eastbourne.

QUARTERLY MEETINGS OF COUNCIL AND STANDING COMMITTEES N.V.M.A. DURING 1951

The following dates are given for remaining meetings this year, chiefly to give members plenty of time to reserve hotel accommodation.

In London

Monday, April 16th:
2 p.m. Organising Committee
4 p.m Parliamentary and Public Relations Committee.

Tuesday, April 17th:
10 a.m. Veterinary State Medicine Committee.
12 noon Home Appointments Committee.
2.15 p.m. General Purposes and Finance Committee.

Wednesday, April 18th:
11 a.m. Council

In Edinburgh

Wednesday, July 11th:
11 a.m. Home Appointments Committee.
2 p.m Organising Committee.
4 p.m. Parliamentary and Public Relations Committee.

Thursday, July 12th:
11 a.m. Veterinary State Medicine Committee.
2 p.m. General Purposes and Finance Committee.

Friday, July 13th:
11 a.m. Council.

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Dishorning of Cattle

The Technical Development Committee of the Association has under review methods of dishorning cattle, and is particularly anxious to secure information on methods used in practice.

Dishorning by the Rubber Ligature Method

Information is required, particularly, on methods of dishorning using rubber bands or ligatures, with special reference to (*a*) technique used, (*b*) pain involved during the whole process of the removal of the horn, and (*c*) reliability in effecting removal of the horn, and length of time taken.

It would assist the Committee greatly if members would respond promptly to this appeal for information by writing on the subject to the General Secretary, N.V.M.A., 36, Gordon Square, London, W.C.1.

R.C.V.S. OBITUARY

Smith, Alfred, Colonel late I.C.V.D., West Croft, Seaford. Graduated London, December 17th, 1890; Fellowship May 14th, 1897. Died February 24th, 1951; aged 82 years.

Thwaytes, Robert Charles George, Major R.A.V.C. (retd.). Graduated London July 15th, 1910. Died February 11th, 1951; aged 62 years.

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PERSONAL

Miss Myra Brain's Fifth Hockey International.—Miss Myra Brain, whose father is the well-known Cheltenham veterinary surgeon, is one of two Gloucestershire players who have been selected to represent England in the women's international hockey match against Ireland at Wembley this month. This will be her fifth international: she played for England for the first time last season in four matches, as centre-forward. This time she is chosen as right-wing, the position in which she has played for several years in the West and Gloucestershire teams. Miss Brain, who teaches P.T. and games at Tate's Grammar School, where she herself was educated, also plays tennis for the county.

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LEGAL NOTES

Important Decision Under the Veterinary Surgeons Acts

Animal Food and Medicine Vendor Exceeds Proper Function by Diagnosing and Prescribing

The Royal College of Veterinary Surgeons, in the course of the several prosecutions which it is bringing in various parts of the country to ensure the implementation of the Veterinary Surgeons Acts has secured a conviction in an important case. From the report below it will be observed that the person concerned was a salesman of animal foods and medicines, but whom the Court held to have gone beyond his proper function by diagnosis and prescription of the medicines which he was selling.

It cannot be too strongly emphasised that it is illegal for any unqualified person to diagnose diseases of animals or give medical or surgical treatment to animals, with the limited exceptions which the 1948 Act allows.

Generally speaking, it is legal for any other person not on the Register of Veterinary Surgeons or the Supplementary Veterinary Register to sell medicines to a lay person when the latter has asked for a special preparation by name. It is illegal for such a vendor to examine an animal with a view to prescribing medicine for it or to do what is commonly known as counter-prescribing.

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In its issue of February 19th, the *Exeter Express and Echo* reported that at Exeter Magistrates' Court on that day a salesman of animal foods and medicines, Paul Benson, of Langdown, Spreyton, was fined £20 with £3 3s. costs, for practising veterinary surgery when not registered to do so

Benson pleaded "Not guilty." He said he was employed by Mr. Peter Mason of Seaton, proprietor of the firm, Farm Specialities.

Mr. R. J. McGahey prosecuted for the Royal College of Veterinary Surgeons.

William Goss Sampson of Barton Place Farm, Exeter, said that one of his cows having aborted, and having heard that the medicines supplied by Farm Specialities were effective, he communicated with them. Benson called on November 22nd and picked out a number of cows which he said needed his treatment. He examined the cow which had aborted. Benson supplied him with a box containing 30 phials of a medicine which had to be placed at intervals under the tongues of the cows and also two half cwt. bags of herbal food which he said would build up the resistance of the animals. He was told that the medicine cost 30s. and the herbal food £3 15s.

Questioned by Mr. C. E. Hall, defending, Mr. Sampson agreed that Benson's visit was only additional to the visit of his own veterinary surgeon. He was not asked for any attendance fee.

Mr. Kenneth George Morgan, M.R.C.V.S., gave evidence that while Benson was in conversation with Mr. Sampson he arrived at the farm, and could not help overhearing what they were talking about. After Benson had examined the cow which aborted he heard him call Mr. Sampson over to look at it. Benson looked at a discharge on one cow and said that it was almost in a condition of "whites." For some reason witness could not understand Benson also picked on a number of beasts and said they needed his treatment.

Witness said he advised Mr. Sampson against using the medicine or food supplied. For infectious abortion veterinary surgeons had a regular system of treatment sponsored by the Ministry of Agriculture, the animals being vaccinated, said Mr. Morgan. Benson's treatments had no semblance to vaccination.

Benson told the Court his job was to visit farmers, supplying them with various medicinal and other products which might be useful to them. The food they sold was herbal, and designed to be mixed with the normal diet to build up the resistance of cattle to disease. The medicines were supplied to their firm by a Glasgow firm run by a doctor, and who had a qualified veterinary surgeon on their staff. He often met surgeons on the farms, and they knew the work he was doing.

Benson added that he had been with the Devon firm for four or five years. He had never practised veterinary surgery, but was interested in homeopathy—the use of foods to prevent and cure diseases. His job was only to supply proprietary medicines.

Corroborative evidence was given by Mr. Peter Mason.

Mr. Hall submitted that Benson was merely told what Mr. Sampson believed to be wrong with his animals and supplied a proprietary medicine and herbal food which contained nothing harmful.

Imposing the fine, Mr. R. J. Rew (Chairman) said the Bench had come to the conclusion that in his zeal to sell Benson had stepped over the mark, and did in fact inspect, diagnose and prescribe.

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Trichina spiralis Infection: Failure of Claim Against Butcher

In *The Times* Law Report, February 21st, there is recorded the following judgment, given by Mr. Justice McNair, in the King's Bench Division of the High Court, in favour of the defendant, Mr. A. G. Hedges, a Chiswick butcher, who was sued by Mrs. Noreen Heil, of Gunnersbury Park, Ealing, for damages for alleged breach of warranty on the sale to her of two pork chops.

His Lordship said that on December 21st, 1946, Mrs. Heil bought two pork chops from the defendant. They were articles which it was the defendant's business to supply, and the sale accordingly gave rise to the conditions in section 14 (1) (2) of the Sale of Goods Act, 1893, that they were fit for human consumption and of merchantable quality. The plaintiff alleged that, in breach of these conditions, the chops were infected with parasite worms with the result that she contracted a disease known as *trichina spiralis* and was seriously ill. No claim was made based on negligence, and no suggestion was made that the defendant had been negligent.

The defendant alleged (1) that the pork was purchased by the plaintiff's husband, so that any contractual relations would be with him and not with the plaintiff, and (2) that the pork was fit for human consumption and was of merchantable quality, and that if it was the cause of the plaintiff's illness it was due to the fact that it was uncooked or insufficiently cooked.

With regard to the first point, his Lordship discussed the facts applicable and said that, in view of the opinion which he had formed on other questions raised, it was unnecessary to express a concluded opinion, but he was inclined to the view that the purchase of the pork was made by the plaintiff as agent for her husband.

It was common ground that the disease from which the plaintiff suffered could only be caused by infected pork. The disease was uncommon in this country, and since 1941 there had only been one isolated case, in 1945, but it was more common in Europe. If pork which was infected with the disease was subjected in cooking to a temperature of 137° the infected worm which was the cause of the disease would be killed and no harm would result from eating the pork. The plaintiff had said that she did not like pork and that she had not eaten any for two years before December 23rd, 1946.

The maid who cooked the chops said that she cooked them quickly, that they were done outside but not all through, and that when they were cut open a little blood came out. The plaintiff found that they were under-cooked and took them to the maid for further cooking, but finding that the utensils had been washed she did not trouble the maid to cook them further. She took them back, pricked them over again and then put them in the stove. He (Mr. Justice McNair) was satisfied that the chops were markedly underdone and that the inside of them, at least, was in such a condition that, if infected, the parasites would survive.

He was abundantly satisfied that the plaintiff's illness was trichinosis, and that it was caused by the pork. The question, therefore, was whether the defendant was guilty of a breach of the condition requiring that it should be reasonably fit for the purpose for which it was sold in accordance with section 14 (1) (2) of the Sale of Goods Act. He (his Lordship) was satisfied that it was common knowledge that pork should be cooked for a longer period than other meat, and that the proper way was to cook it until it was white. In the circumstances he thought that the implied condition of fitness would be satisfied if the pork when supplied was in such a condition that, if cooked in accordance with accepted standards, it would be innocuous. No useful English authorities had been cited to him, but he had been referred to Canadian and American cases which supported that view. In his judgment the plaintiff's allegation as to the breach of the implied conditions of fitness and merchantable quality failed, and there would be judgment for the defendant.

If he had held the defendant to be liable he would have assessed the plaintiff's special damage at £209 6s. 10d. and her general damages at £750.

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ADDRESSES OF DISEASE-INFECTED PREMISES

The list given below indicates, first, the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak.

Swine Fever:

Derby.—Wellsring Farm, Holymoor, Chesterfield (Feb. 21st).

Durham.—Galloping Green Farm, Eighton Banks, Co. Durham (Feb. 19th).

Lancs.—Bottomfield Farm, Woodhouses, Ashton-under-Lyne (Feb. 20th).

Midlothian.—Green Park, Gylemuir Road, Corstorphine, Edinburgh (Feb. 22nd).

Norfolk.—Parr's Farm, Knapton, North Walsham, Norfolk (Feb. 19th); Landscape, Haynford, Norwich (Feb. 20th).

Warwicks.—Foreshaw Park Farm, Earlswood, Birmingham. (Feb. 20th); 233, Barrow Lane, Yardley, Birmingham (Feb. 22nd).

Somerset.—"Bannerside," Batheaston, Bath (disease at: Piggeries at Garston Garden, Bathford, Bath) (Feb. 24th).

Yorks (E.R.).—15, Cottage Holdings, Dunswell, Hull (Feb. 19th); 67, Victoria Road, Driffield (Feb. 23rd).

Yorks (W.R.).—Jacques Premises, North Row, Flanshaw Lane, Wakefield, Yorks; 2, Dale Road, Rawmarsh, Rotherham, Yorks (Feb. 19th); St. Catherine's Institution, Tickhill Road, Doncaster (Feb. 22nd); 52, Park Hill Lane, Sheffield (Feb. 23rd); Pease House Farm, Alverthorpe, Wakefield (Feb. 24th).

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Progeny Testing Bulls for A.I. under Farm Conditions

As the subject with which it deals is one of great interest to a large number of our readers, we reproduce the following article from the January issue of *The Home Farmer*.

In other branches of agriculture there are excellent examples of the value to be derived from testing the tools and elements of production before adopting them for general use. Unlike the engineer and the plant breeder, the cattle breeder has had little opportunity to use breeding stock proven for superior merit.

The development of the technique of artificial insemination has created a demand for highly selected bulls, chosen on the basis of the inherited characters of their daughters. Half the milk producers in England and Wales are now members of A.I. Centres. About one bull calf per 10,000 born in England and Wales is required for use in an A.I. Centre. A sire leaving 2,000 daughters may provide £1,000,000 in meat and dairy produce through his own sons and daughters. Some bulls will greatly exceed this production, which emphasises, if any emphasis is required, the importance of the selection of sires.

The practical difficulties of proving bulls on enough daughters have not been overcome by many individual breeders. Consequently the great majority of calves may have been sired by young bulls. By 1948 only about 18 bulls a year, out of the 33,000 licensed annually in England and Wales, left 20 recorded daughters in their lifetimes and were also in the top 5 per cent. on merit. The supply of suitable sires for A.I. was quite inadequate. Breeders have increased the number of recorded herds six-fold in seven years. Breeders of cattle are now bringing forward and test-mating more young bulls every year. In a breeder's herd it is seldom possible to test-mate more than one sire a year, as the average size of recorded herds is only 21. Two bulls used in different herds under separate management are often offered for sale to A.I. Centres, but the conditions of management and breeding in the herds are not constant in any respect. The assessment of merit of single bulls tested in one herd is impractical on a large scale where much is at stake.

The demand for bulls, proven for the transmission of superior merit, which A.I. has created, calls for the development of progeny testing on a larger scale than is possible by purchasing suitable progeny recorded bulls from breeders. The method of proving adopted by the Board resembles the randomised block of the plant breeder. The primary object of the plan to progeny test young

bulls under farm conditions is to overcome variations in management and breeding by comparing a team of young bulls simultaneously in a group of recorded herds belonging to members using A.I. A group of four young bulls might be compared by starting them on an eight-day collection rota at the yearling stage. They would be used in recorded herds known as bull proving herds selected from the 6,000 herds which record officially and use the M.M.B.'s Centres. They comprise only 11 per cent. of the A.I. membership. The team of bulls would all start work together and members of the group of bull proving herds would use the four young bulls according to the fixed collection rota, without selecting any particular bull in the team. In practice the group of herds form one breeding herd to test four bulls under conditions of management which will be similar for the group of daughters by each bull. One hundred cows or heifers in calf to each bull should give sufficient heifer calves in due course on which to base a progeny test. The basis of comparison on yield is the average production of the daughters of each bull. With significantly large numbers, each group of bull's daughters perform under similar average conditions, as if they were in one herd. A start was made with this method of progeny testing in the winter 1949-50 at Cheswardine and Tarporley. Excellent co-operation was received from members, who are taking a great interest. Some Centres have insufficient herds of particular breeds to allow testing to be carried out, but it is expected that the majority of the young bulls entering A.I. in 1951 will be formed into progeny testing teams by transferring them to Centres which have housing accommodation and sufficient bull proving herds.

In addition to the bull proving herds, herds owned by public bodies, particularly colleges and farm institutes, will be used for further investigational work to study such aspects as growth, solids-not-fat, conformation, and let-down of milk.

The young bulls chosen for progeny testing are those with a high chance of success, as shown by the New Zealand Dairy Board—sired by progeny tested bulls out of lifetime merit cows. These young bulls are selected by the Committee members of each Centre, who pay due attention to essential points of productivity and conformation. These committees and their section panels are elected by the members.

The test matings will be arranged by the Dairy Husbandry Officers and the Veterinary Managers of the Centres. In due course the inseminations are followed up by the milk recorders so that the result of each insemination is known and all heifer calves are earmarked. As the calves grow up their development will be closely watched. The bulls are tested under conditions which are representative of the district, and all members are invited to take an interest.

At all stages of bull selection, the value of the Bureau of Records is felt. The link-up in one organisation of the Board's A.I. organisation and milk recording provides unique advantages. Later on the records of the progeny of the teams of young bulls will be collected, and interpreted in the full light of knowledge of practical considerations. The first 305 day records should become available when the bull is five years old. If the results are favourable a bull can be used to breed 2,000 or 3,000 calves a year. The decision on a bull may be deferred for a year, especially in cases of late maturity.

In the preliminary selection of cows to breed bulls, long life receives due regard. At the stage when the daughters complete first lactations the decision is taken to breed females for milk production. Ideally in the final stage of selection, when a bull's daughters have completed three lactations, the decision is taken as to whether the bull is good enough to sire sons for A.I. out of lifetime merit cows.

In order to test for undesirable recessives, and to step up the concentration of genes carried by any bull, it is hoped to use him on some of his own heifers for their own pregnancy. In the case of an outstanding bull which dies young, these sire-daughter-matings would ensure the concentration of his outstanding merit. In due course it is believed that nearly all the replacements required by the national herd can be sired by progeny recorded bulls used on a large scale. Necessarily, matings would be carried out to test young bulls of promise, but it is estimated that 1,000 progeny recorded bulls could sire the majority of the national herd.

It is hoped that the development of beef breeding will allow progeny testing to be started in conjunction with abattoir records. It will be particularly important to develop progeny testing for beef animals if, and when, the transplantation of ova from beef cows to bull cows in dairy herds becomes practical commercially.

The full details of the plan were submitted to the Board Panel of Honorary Consultants, whose general approval was received last year.

AGRICULTURAL SCHOLARSHIPS

The Ministry of Agriculture and Fisheries invites applications for the undermentioned scholarships:—

Ten Senior Scholarships, tenable at University Departments of Agriculture, or Agricultural Colleges, for degree or diploma courses in an agricultural subject; or at Veterinary Colleges for courses in Veterinary Science.

Six Extended Junior Scholarships (for those who have already held Junior awards), and

Sixty Junior Scholarships, tenable at Farm Institutes or similar institutions, for courses not exceeding one year in duration, in agriculture, horticulture, dairying or poultry husbandry.

The scholarships are open to the sons and daughters of agricultural workmen or of working bailiffs, smallholders and other rural workers whose means and method of livelihood are comparable with those of agricultural workmen, and to persons who are themselves *bona fide* workers in agriculture. The value of the awards is such that neither the recipients nor their parents are normally required to make any contribution towards the cost of the training provided. The usual method of selection is by interview, no written examination being held, but candidates must be able to satisfy the Selection Committee that they are in a position to derive educational benefit from the proposed course of instruction and that they intend to follow an agricultural pursuit on completion of their training. Candidates for Senior scholarships must have attained the age of 17 and for the Junior scholarships should in general be not less than 17 years of age on September 30th, 1951.

Full information concerning the scheme and forms of application may be obtained from the Secretary (Room 314), 1, Cambridge Terrace, Regent's Park, London, N.W.1, or from the Education Offices of County Councils.

The latest date for submitting completed applications is March 31st, 1951.

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LIVESTOCK EXPORT GROUP

The report of the Livestock Export Group for the quarter ended December 31st, 1950, shows an increase in the number of stock exported through quarantine and direct shipments to Canada and U.S.A. A very large number of animals still remain to be shipped to Australia and the shipping companies have been notified of the position with a request to make available as much space as possible for livestock. "Australia always presents a difficult problem as cattle may, under the present import regulations, only be shipped during a six-month period, *i.e.*, from December 1st to May 31st. As the number of cattle purchased for export increases, this difficulty is accentuated when bearing in mind, firstly the number which can be carried by a vessel, and secondly the accommodation available in quarantine stations both here and in Australia. The period of quarantine here (14 days) and in Australia (30 days) has also to be considered, the latter period being the governing factor in the spacing out of shipments. The failure of animals to pass a specified veterinary test means the loss, particularly now, of valuable shipping space, and the Group has requested the Ministry to ensure that animals are tested at the earliest opportunity, the Group for its part endeavouring to give information as far in advance as possible of sailings, etc. In this respect, the Group notifies both the Ministry and shipping agents the same day as acceptance of a vessel is given by the shipping company."

Quarantine Stations

Alterations to the Glasgow Quarantine Station were completed in November and the shipment of stock to Canada and the U.S.A. is now back to normal; future shipments should not be unduly affected. The station is fitted out with modern equipment "and leaves no doubt in the minds of members that it can cater efficiently for the well-being of animals and maintain a high standard of cleanliness at all times." The station is of concrete construction, being sited entirely on its own, and is situated at the Royal Albert Dock. There are available 16 boxes and 26 stalls, allowing for the accommodation of 42 cattle or between 65 and 70 small livestock. In addition, there is a forage barn, sheep dip and washing house (all within the building) from which there is an exit to outside pens for drying out sheep.

"The Ministry are to be congratulated on this achievement and all breeders and exporters of livestock will agree that the erection of the station was necessary and that the cost involved has been money well spent.

"In considering the prospect of large shipments of cattle, the Group thought it advisable, in view of the limited space available in the Ministry's Quarantine Stations, to investigate the possibility of securing alternative and larger premises to meet the problem. In enlisting the Ministry's aid suitable premises have been inspected at Cardiff and Greenock which can accommodate upwards of 400 head and up to that figure respectively."

Quarantine Charges

Unfortunately, owing to ever increasing costs, the Ministry has found it necessary to raise its charges for quarantining stock. The Group has already notified shippers and exporters of the new charges, the main charges being as under:—

	£ s. d. *Each*
Cattle (over ten months of age)	15 0 0
Pigs (over four and a half months of age) ...	5 15 0
Sheep and Goats	3 10 0

The Executive have already recorded that they deplore the fact that the Ministry have been obliged to take this step, particularly as the Group has been endeavouring to secure reductions in the cost of export generally.

Trade Agreements

Japan.—As stated in the previous quarterly report, the Group had requested the Board of Trade to ascertain when and to what extent the livestock trade with Japan would be resumed, particularly in regard to pigs. "The Group has recently been notified that a trade agreement has been concluded between the sterling area and the Japanese authorities. Breed societies, exporters, etc., are advised to communicate with prospective importers notifying them of stock available for export and requesting them to apply to the Japanese Government for import permits."

France.—In the September report, reference was also made to the Group having requested the Secretary for Overseas Trade to press for an adequate quota to be allocated for the import into France of live poultry from this country. The Group was subsequently informed that an allocation of £2,000 has been made.

Brazil.—In the Ang.o-Brazilian trade agreement for the year ending June 30th, 1951, the sum of £100,000 has been allocated for the importation into Brazil of live animals. "Your Executive have expressed the opinion that this figure is insufficient to meet the demand, particularly when taking into consideration the high value of bloodstock exports, and that they would wish to see closer co-operation between Government departments and the Group when quotas for livestock are under discussion."

Export of Poultry by Air.—In view of difficulties which have arisen with regard to the despatch of day-old chicks by air, the Group has made representations to the Board of Trade on behalf of poultry exporters.

Import Regulations

The latest regulations relating to the importation into Canada of cattle inoculated with *Brucella abortus* vaccine (strain 19) were forwarded to all members of the Group in November.

"With the advent of spring sales and in the hopeful anticipation of continued buying by clients from all parts of the world, the Group feels it necessary once again to emphasise the necessity for the strictest care to be exercised in ensuring that animals are despatched in a clean and healthy condition. All breeders and export agents are asked to give the Ministry their full est support in supplying accurate details of stock when applying for the Ministry's export and other certificates."

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TSETSE AND TRYPANOSOMIASIS RESEARCH AND RECLAMATION IN EAST AFRICA

One of the regional research organisations which operate as schedu'ed services of the East Africa High Commission is the East African Tsetse and Trypanosomiasis Research and Reclamation Organisation (EATTRRO), which has been formed by the amalgamation of the departments previously responsible for these various spheres of work. This amalgamation (states the Colonial Office publication *Commonwealth Survey*—No. 64, February 2nd, 1951) has made for increased efficiency and closer liaison between the departments.

Proposals for a research programme to cover the years 1951-1956 have been drawn up and are under consideration by the African Governments. It is considered that, providing the proposals for a new central trypanosomiasis research station at Sukulu, in Uganda, are approved, reasonable facilities for the necessary research work, within the limits of East African financial resources, will be available.

In the course of 1949 a tour of the East African territories, financed by a grant from U.K. Colonial Development and Welfare funds, was made by Mr. H. E. Hornby, formerly Directory of Veterinary Services, Tanganyika, and late Director, Tsetse Research, Tanganyika. His terms of reference were "to travel widely in East and Central Africa and to make a survey of losses from trypanosomiasis in all types of domestic animals and to make recommendations for research and practical measures for control." His findings have already proved most useful both to EATTRRO and to local veterinary staff.

Trypanosomiasis Research

The main centre of trypanosomiasis research in East Africa has, in the past, been the Tinde Laboratories, in Tanganyika, but it is now proposed to set up a new Central Trypanosomiasis Research Station at Sukulu in Uganda. Detailed estimates of capital and recurrent costs of this station have been prepared and discussions have taken place with the Colonial Office, the East African Governments, and the East African Central Assembly, and it is hoped soon to make formal application for a grant from U.K. Colonial Development and Welfare funds. The Uganda Public Works Department has prepared plans for the laboratories, staff quarters, and ancillary buildings.

The year's work at Tinde, which will become a field station once the Sukulu Trypanosomiasis Research Institute has been established, included the completion of a series of tests of the infectivity to man of the strain of *T. rhodesiense* which had been maintained since 1934, and a series of investigations on the relationship of certain trypanosomes.

The proposals for inter-territorial research on the prophylactic properties of the cattle vaccine, antrycide, have now been implemented, and the research programme is being carried out jointly by EATTRRO and the East African Veterinary Research Organisation. Research so far undertaken has revealed certain limitations to the prophylactic use of antrycide, and more attention will hereafter be paid to its curative properties.

Tsetse Fly Research

During 1949 there was a gradual change of emphasis in some aspects of tsetse fly research, and a new programme was drawn up which should make a practical contribution to the solution of the trypanosomiasis problem as a whole.

It is pointed out in the 1949 Report of EATTRRO, recently published, that the first requirement is a precise description of the habitats of the various species of tsetse flies, and particular attention is now being paid to such factors as plant density and climate. One of the principal purposes of this research is the development of survey techniques suitable for the scientific planning of reclamation work; this aims at the eradication of the tsetse fly with a minimum interference with vegetation.

The essential solution to the tsetse problem in East Africa is now generally considered to include a planned land utilisation policy involving the control of human settlement in tsetse-infested country, which, if it can proceed relatively unhampered by the threat of disease to man and stock, will eventually produce conditions in which the fly can no longer survive.

The greater part of the tsetse fly research described in the 1949 Report was carried out at Shinyanga in Western Tanganyika, where various research projects have been in operation for a number of years. This work includes the study of natural cycles in the density of tsetse flies, game destruction experiments, and studies of the habitat and breeding sites of the flies.

Tsetse Reclamation.—All tsetse reclamation work, the Report points out, is governed by the need to make the fullest possible use of the land, and increased attention has recently been paid to the immediate practical value of each reclamation scheme. The value of the land must be such as to justify the cost of reclamation and of keeping it clear of flies. During the year 1949 six schemes of experimental reclamation were under the control of the Organisation; these were at Tabora and Iringa in Tanganyika; Samia, Kuja River and Lambwe Valley in Kenya; and South Ankole in Uganda.

The Lambwe Valley scheme, for example, envisages the reclamation of a fertile valley at present almost uninhabited owing to tsetse fly and the absence of surface water supplies. Following the expulsion of game, settlement will be started under the auspices of the African Settlement and Land Utilisation Board, and dams for water supplies will be constructed.

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Dr. Alex Calder, director of pig supplies at the Ministry of Food, in an address to the Farmers' Club in London on February 6th, advocated a national pig-recording scheme to raise the standard of the industry and an organisation for training in pig-keeping.

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A British Committee representative of poultry interests in the U.K. and Northern Ireland has been set up in connection with the ninth World's Poultry Congress to be held in Paris from August 2nd to 9th. Sir James Turner is Chairman, Dr. A. W. Greenwood Vice-Chairman and Major Ian Macdougall Secretary.

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal opinions of the writer only and their publication does not imply endorsement by the N.V.M.A.

THE CURRENT OUTBREAK OF SWINE FEVER

Sir,—Apropos Mr. W. R. McKinna's article and subsequent discussion on the current outbreak of swine fever in the West Riding reported in *The Veterinary Record* of February 10th, I beg to point out that the symptoms described are very similar to those encountered in a severe outbreak in Lincolnshire during the 1944-45 winter. A large number of cottagers' pigs that were being fattened for home consumption were affected and, as the epidemic was at its height at normal killing time, the cottagers' loss of bacon was serious. The onset of symptoms in these large pigs was quite benign, comprising capricious appetite, high temperature and slightly unsteady gait, the inco-ordination of the hind quarters progressing slowly to paralysis, some pigs living several weeks. The text-book *post-mortem* lesions were usually conspicuous by their absence; petechial haemorrhages were general and the so-called "velvet gut" was fairly constant.

There was considerable correspondence in the daily press at the time, when the disease was refuted as swine fever and described as "Lincolnshire disease." At the same time, when the disease was found in suckling pigs and young stores the symptoms took the usual course with the consequent familiar *post-mortem* lesions.

Yours faithfully,
PHILIP E. EMSON.

Bourne,
Lincolnshire.
February 20th, 1951.

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AN EFFECTIVE TAENIACIDE IN THE DOG

Sir,—The most effective way to remove tapeworms is to use a modification of an old method and the taeniacide used is Tenaline (Willows, Francis Pharmaceutical Products, Ltd.); this is described as a highly concentrated extract of areca minus the toxic properties of the drug.

The dog is starved for 15 to 18 hours and deprived of water for the last eight hours before treatment. The actual treatment consists of the giving of chloretone followed 20 minutes later with a well-mixed suspension of equal parts of tenaline and glycerine; after a further 20 to 30 minutes a soap and water enema is given.

The best time for treatment is obviously the early morning and the advantages are that the owner has nothing to do except withhold food and water; furthermore, the worms are usually removed within the hour of the beginning of treatment. This routine is effective with the majority of dogs, though occasionally more than one enema is required or the dog may have to be taken for a walk before it is so.

The dose of chloretone is estimated at 1 to 3 grains according to the size of the dog and the tenaline is calculated as 5 minims for 4 lb. bodyweight in the obese and young dog and 3 minims per 2 lb. bodyweight in the healthy dog.

Yours faithfully,
CHURCHILL FROST.

326, West End Lane,
N.W.6.

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REPAIR OF FRACTURES IN HORSES

Sir,—Being a keen horseman and horse lover, from my first days at College I have been greatly interested in the possibilities of fracture repair in horses. The recent correspondence in *The Veterinary Record* has encouraged me, although with diffidence as a student, to present my views on the subject for the consideration of your readers.

I suggest that a start could and should be made on preliminary investigations as to the feasibility of, and the techniques to be employed in, the reduction and fixation of fractures in equines. This could be done at one or more of the teaching colleges, where exist all the facilities that are required.

The insurance of horses is a very real obstacle, but I feel sure that the companies concerned would readily fall into line if and when the treatment of these cases becomes established as a practical proposition.

The problems to be overcome are mainly of a mechanical nature. The most likely sites of accident are the steeplechase course and the hunting field.

The procedure I envisage for dealing with the cases is as follows:—

(*a*) *Diagnosis.*—This would be done on the spot by the attendant veterinary surgeon or local practitioner. A decision as to whether or not the case is operable would be made.

(*b*) *Transport.*—Three possible methods might be used:—

(1) A large lorry could be fitted with a Weston's purchase mounted on an "H" section steel girder. The girder would protrude several feet from the back of the lorry, enabling the animal to be hoisted up and moved into the truck. Special slings suitable for this purpose already have been designed and produced, and are now in use by the London Fire Brigade (one of their duties is apparently the salvaging of fallen horses in the London streets!).

(2) A "low-loading" trailer would be designed, with ramp and floor composed of wooden rollers. The fallen animal could be hauled up the ramp by a winch mounted at the front.

(3) Special slings with, say, five handles each side could be designed for the manual lifting and carrying of a horse. Ten men could carry a heavyweight hunter up the ramp of a large cattle truck.

(*c*) *Operating Theatre.*—This needs to be a large room (about the size of two loose-boxes in one). The same arrangement of Weston's purchase mounted on a projecting steel girder would be fitted to the ceiling. This would facilitate the transference of the animal from the vehicle to the theatre.

It is obvious that some form of basal narcotic or anaesthetic would be necessary before lifting the horse, both for humanitarian reasons and to prevent struggling.

I leave the details of surgical technique to those better qualified than I to give their opinion.

Though I may never become a sufficiently good surgeon to carry out these operations myself, I am quite confident that I could move a horse from A to B without pain or injury, if I had the necessary equipment. My own intention, if and when I qualify, is to try my hand at bone surgery in small animals, in which way I hope to acquire the necessary skill to attempt the repair of fractures in horses.

Yours faithfully,
H. M. CHANDLER.

Royal Veterinary College,
Camden Town, N.W.1.
February 13th, 1951.

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NOMENCLATURE OF ANIMAL DISEASES

Sir,—I feel some sympathy for Mr. Hanson's rather emotional objection to my first letter, but I think that he is about 50 years old in his argument. It is only about half a century ago that our calling began to grow from an *art* into a *science*. This change has made fast and steady progress unti to-day veterinary medicine is mostly a *science* and only slightly an *art*, and as such it must accept a discipline in the shape of terminological precision, like all other branches of science.

It is not as if no progress has been made in overhauling nomenclature; we have dropped such terms as "murrain," "flux" and "garget," which Mr. Hanson would, no doubt, like to be revived. I think, on the other hand, that we shou'd sweep away the old names such as "foul in the foot," "joint-ill," "milk fever," etc.

I know that, if I were a teacher, I would feel ashamed to send students away with such words.

Yours faithfully,
J. TWEEDALE EDWARDS.

"Redlands," Harden Park,
A'derley Edge, Cheshire.
February 26th, 1951.

DISEASES OF ANIMALS ACT, 1950—GREAT BRITAIN

Summary of Returns of Confirmed Outbreaks of Scheduled (Notifiable) Diseases

Period	Anthrax	Foot-and-mouth	Fowl Pest	Parasitic Mange*	Sheep Scab	Swine Fever
Jan. 1st to Jan. 15th, 1951	17	—	131	—	2	35
Corresponding period in—						
1950	13	—	10	—	5	—
1949	12	—	15	—	3	1
1948	3	—	37	—	6	2

* Excluding outbreaks in Army Horses.

Tuberculosis Order of 1938

The number of bovine animals slaughtered under the Tuberculosis Order of 1938 during the period October 1st to December 31st, 1950, was 1,195.